Attachment 3
Structural BMP Maintenance Information

This is the cover sheet for Attachment 3.

The City of SAN DIEGO

RECORDING REQUESTED BY:
THE CITY OF SAN DIEGO AND
WHEN RECORDED MAIL TO:
Latitude 33 Planning & Engineering
9968 Hibert St., 2nd Floor
San Diego, CA 92131

(THIS SPACE IS FOR RECORDER'S USE ONLY)

STORM WATER MANAGEMENT AND DISCHARGE CONTROL MAINTENANCE AGREEMENT

APPROVAL NUMBER:	ASSESSORS PARCEL NUMBER:	PROJECT NUMBER:
2505422	306-420-04, 05, 10	679136

This agreement is made by and between the City of San Diego, a municipal corporation [City] and SEA BREEZE 56, LLC, the owner or duly authorized representative of the owner [Property Owner] of property located at 8092 1/3 Carmel Mountain Road San Diego, CA 92129 (PROPERTY ADDRESS) and more particularly described as: Lots 1-6 of Merge 56 Unit 1 Map 16433 (LEGAL DESCRIPTION OF PROPERTY) in the City of San Diego, County of San Diego, State of California.

Property Owner is required pursuant to the City of San Diego Municipal Code, Chapter 4, Article 3, Division 3, Chapter 14, Article 2, Division 2, and the Land Development Manual, Storm Water Standards to enter into a Storm Water Management and Discharge Control Maintenance Agreement [Maintenance Agreement] for the installation and maintenance of Permanent Storm Water Best Management Practices [Permanent Storm Water BMP's] prior to the issuance of construction permits. The Maintenance Agreement is intended to ensure the establishment and maintenance of Permanent Storm Water BMP's onsite, as described in the attached exhibit(s), the project's Storm Water Quality Management Plan [SWQMP] and Grading and/or Improvement Plan Drawing No(s), or Building Plan Project No(s): 40552-D.

Property Owner wishes to obtain a building or engineering permit according to the Grading and/or Improvement Plan Drawing No(s) or Building Plan Project No(s): 40552-D.

Continued on Page 2

NOW, THEREFORE, the parties agree as follows:

1. Property Owner shall have prepared, or if qualified, shall prepare an Operation and Maintenance Procedure [OMP] for Permanent Storm Water BMP's, satisfactory to the City, according to the attached exhibit(s), consistent with the Grading and/or Improvement Plan Drawing No(s), or Building Plan Project No(s): 40552-D .

2. Property Owner shall install, maintain and repair or replace all Permanent Storm Water BMP's within their property, according to the OMP guidelines as described in the attached exhibit(s), the project's SWQMP and Grading and/or Improvement Plan Drawing No(s), or Building Plan Project No(s) 40552-D .

3. Property Owner shall maintain operation and maintenance records for at least five (5) years. These records shall be made available to the City for inspection upon request at any time.

This Maintenance Agreement shall commence upon execution of this document by all parties named hereon, and shall run with the land.

Executed by the City of San Diego and by Property Owner in San Diego, California.

See Attached Exhibit(s): "A"

(Owner Signature)

Gary Levitt, President
(Print Name and Title)

Sea Breeze 56, LLC
(Company/Organization Name)

04/22/2021
(Date)

THE CITY OF SAN DIEGO

APPROVED:

(City Control Engineer Signature)

(Print Name)

(Date)

NOTE: ALL SIGNATURES MUST INCLUDE NOTARY ACKNOWLEDGMENTS PER CIVIL CODE SEC. 1180 ET.SEQ.

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT **CIVIL CODE § 1189**

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of San Diego)

On 4-22-2021 before me, Ciomara Galeano, Notary Public,
Date *Here Insert Name and Title of the Officer*

personally appeared Gary Levitt
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

CIOMARA GALEANO
Notary Public - California
San Diego County
Commission # 2281038
My Comm. Expires Mar 15, 2023

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: _____ Document Date: _____

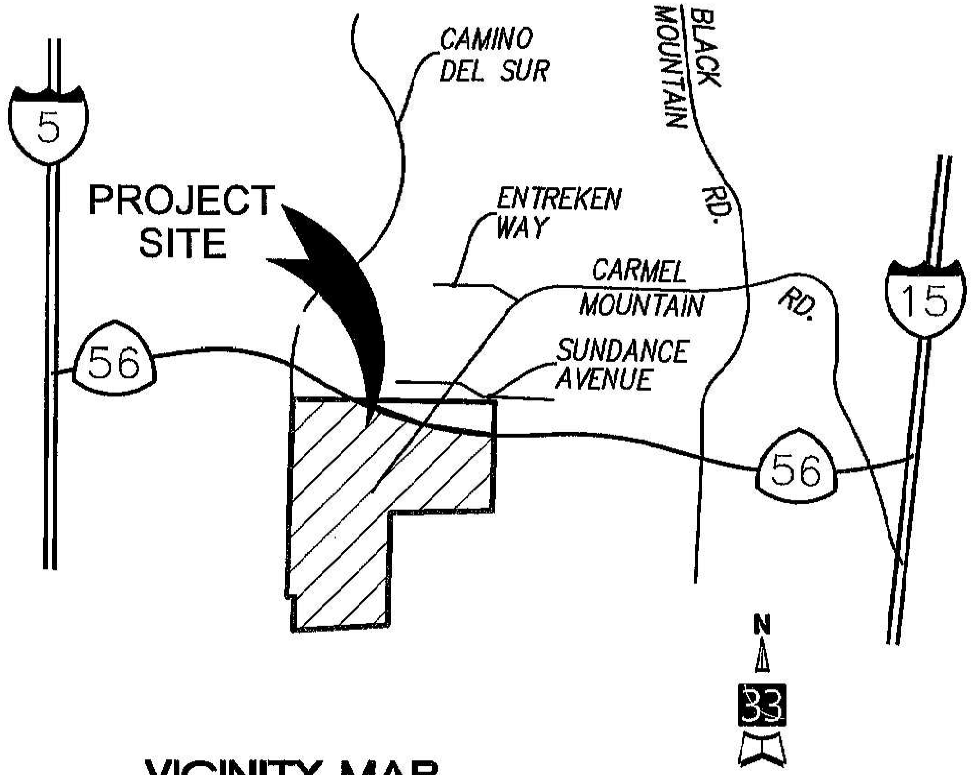
Number of Pages: _____ Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator
☐ Other: _____
Signer Is Representing: _____

Signer's Name: _____
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator
☐ Other: _____
Signer Is Representing: _____

POST-CONSTRUCTION PERMANENT BMP - EXHIBIT 'A'
MERGE 56 ONSITE UNIT 1 DMAS 12 - 14 - SWMDCMA
SHEET 1 OF 5



VICINITY MAP

NO SCALE

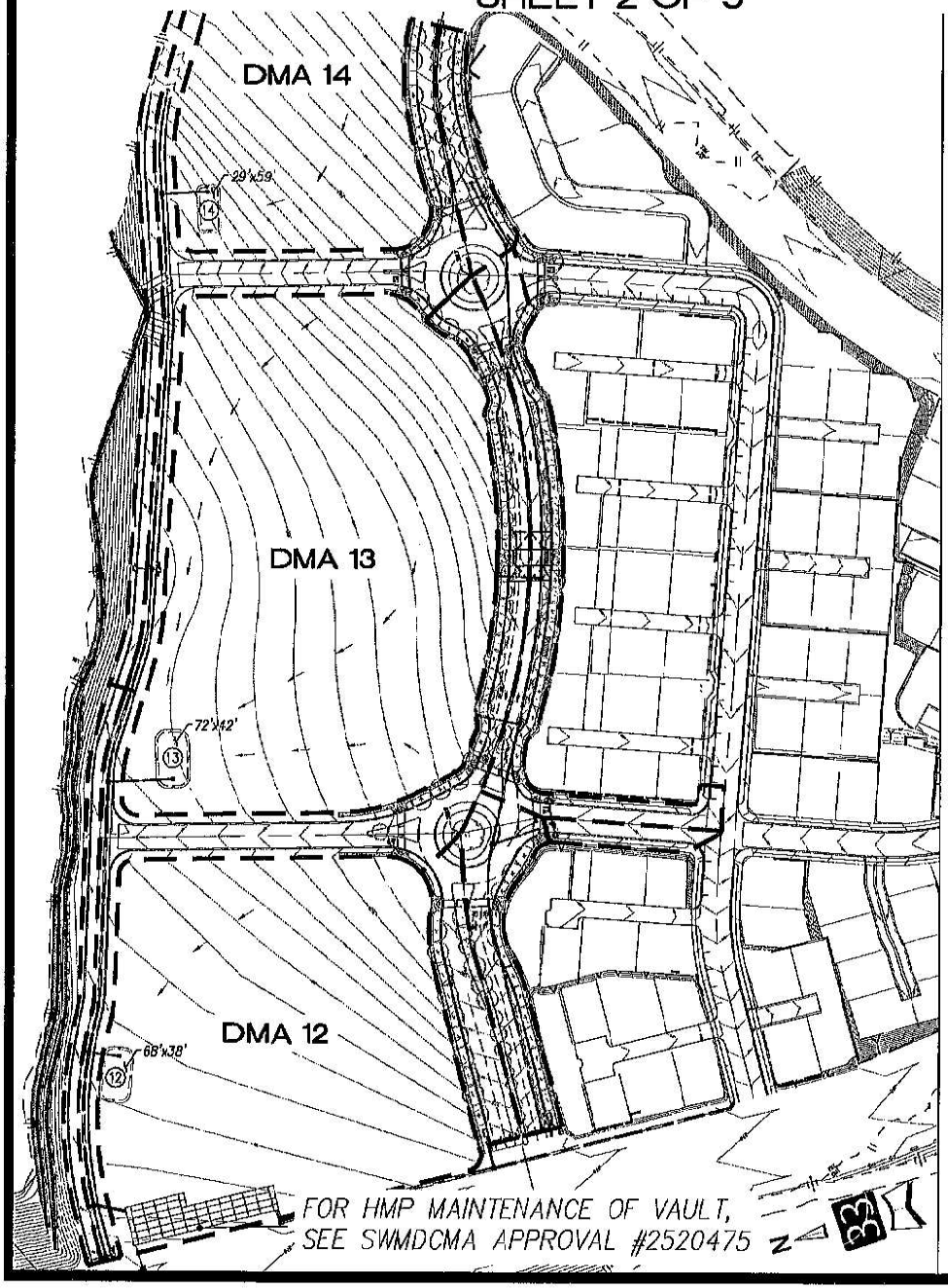
POST-CONSTRUCTION BMP NOTES

- ANY MODIFICATION(S) TO THE PERMANENT POST CONSTRUCTION BMP DEVICES/STRUCTURE SHOWN ON PLAN REQUIRES A CONSTRUCTION CHANGE TO BE PROCESSED AND APPROVED THOUGH DEVELOPMENT SERVICE DEPARTMENT BY THE ENGINEERING OF WORK. APPROVAL OF THE CONSTRUCTION CHANGE IS REQUIRED PRIOR TO CONSTRUCTION OF THE PERMANENT BMP.

SITE MAP NOTES

- NO MATERIALS TO BE EXPOSED TO STORMWATER RUNOFF
- NO BUILDING OR POLLUTANT GENERATING ACTIVITY AREAS ARE PROPOSED (FUELING, GARAGES, WASTE CONTAINERS, WASH RACKS, HAZARDOUS MATERIALS)
- NO ONSITE AREAS OF POTENTIAL EROSION
- NO EXISTING DRINKING WATER WELLS

POST-CONSTRUCTION PERMANENT BMP EXHIBIT 'A'
MERGE 56 ONSITE UNIT 1 DMAS 12 - 14 -SWMDCMA
SHEET 2 OF 5



BIOFILTRATION BASIN AREA TABLE		
BMP	AREA OR FLOW RATE	ORIFICE DIAMETER (IN)
12	BIOFILTRATION BASIN (1849 SF)	–
13	BIOFILTRATION BASIN (2201 SF)	–
14	BIOFILTRATION BASIN (1150 SF)	–

POST-CONSTRUCTION PERMANENT BMP
EXHIBIT 'A'
MERGE 56 ONSITE UNIT 1 DMAS 12 - 14 -SWMDCMA
SHEET 3 OF 5

BMP DESCRIPTION	POST-CONSTRUCTION PERMANENT BMP OPERATION + MAINTENANCE PROCEDURE DETAILS				
	STORM WATER MANAGEMENT AND DISCHARGE CONTROL MAINTENANCE AGREEMENT APPROVAL NO.: 2505422				
	O&M RESPONSIBLE PARTY DESIGNEE: PROPERTY OWNER (SEA BREEZE PROPERTIES, LLC)				
	MAINTENANCE TASK	MAINTENANCE FREQUENCY	MAINTENANCE METHOD	QUANTITY	SHEET NUMBER(S)
POLLUTANT CONTROL					
BIOFILTRATION BASIN	TRASH & SEDIMENT REMOVAL	AS NEEDED AFTER RAIN EVENT	TASKS INCLUDE TRASH REMOVAL FROM BASIN	3	24-26, 34

POST-CONSTRUCTION PERMANENT BMP – EXHIBIT 'A'
MERGE 56 ONSITE UNIT 1 DMAS 12 – 14 – SWMDCMA
SHEET 4 OF 5

BIOFILTRATION BASIN NOTES

1. AMENDED SOIL SHALL CONFORM TO THE STANDARD SPECIFICATION PER APPENDIX F.4 OF THE CITY OF SAN DIEGO STORM WATER STANDARDS MANUAL AND SHALL MAINTAIN A MINIMUM INFILTRATION RATE OF 5 IN/HR OVER THE LIFETIME OF THE FACILITY.

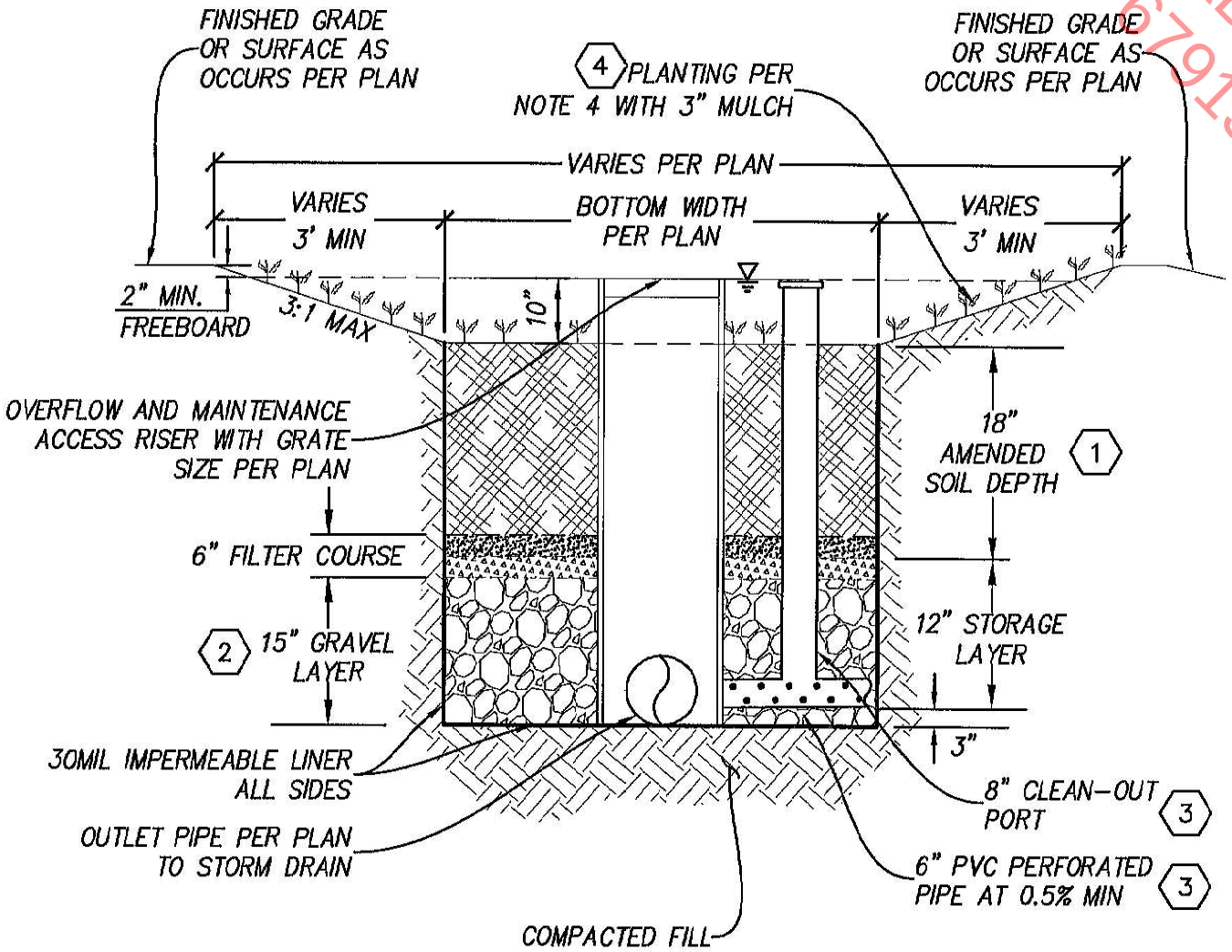
2. GRAVEL STORAGE LAYER SHALL CONFORM TO THE STANDARD SPECIFICATION PER APPENDIX F.5 OF THE CITY OF SAN DIEGO STORM WATER STANDARDS MANUAL AND SHALL CONSIST OF A MINIMUM 6" FILTER COURSE OVER MINIMUM 12" OF CLEAN WASHED ASTM #57 OPEN GRADED STONE (VARIES PER HYDROMOD CALCS).
   FILTER COURSE SHALL CONSIST OF 3" LAYER OF CLEAN WASHED ASTM 33 FINE AGGREGATE SAND OVERLYING A 3" LAYER OF ASTM NO. 8 STONE.

3. UNDERDRAINS SHALL BE MINIMUM 6" SLOTTED PVC PIPE CONFORMING TO ASTM D3034 OR CORRUGATED HDP CONFORMING TO AASHTO 252M. CLEANOUT PORTS SHALL BE A MINIMUM 8" DIAMETER WITH LOCKABLE CAP AND PLACED EVERY 50' OF UNDERDRAIN LENGTH.

4. BIOFILTRATION BASINS SHALL BE PLANTED WITH ADEQUATE GROUNDCOVER AS OUTLINED IN APPENDIX E OF THE SAN DIEGO LOW IMPACT DEVELOPMENT DESIGN MANUAL. SEE LANDSCAPE PLANS SHEETS FOR PLANTING PLAN.

5. BF-1 BIOFILTRATION BASINS WHICH DO NOT INCORPORATE ANY INFILTRATION SHALL BE FULLY LINED WITH A 30MIL IMPERMEABLE LINER ON BOTH SIDES AND THE BOTTOM OF THE BASIN EXCAVATION.

POST-CONSTRUCTION PERMANENT BMP – EXHIBIT 'A'
MERGE 56 ONSITE UNIT 1 – SWMDCMA
SHEET 5 OF 5



BIOFILTRATION BASIN DETAIL (PVT) (BF-1)

NOT TO SCALE

The City of SAN DIEGO

RECORDING REQUESTED BY:
THE CITY OF SAN DIEGO AND
WHEN RECORDED MAIL TO:
Latitude 33 Planning & Engineering
9968 Hibert St., 2nd Floor
San Diego, CA 92131

(THIS SPACE IS FOR RECORDER'S USE ONLY)

STORM WATER MANAGEMENT AND DISCHARGE CONTROL MAINTENANCE AGREEMENT

APPROVAL NUMBER:	ASSESSORS PARCEL NUMBER:	PROJECT NUMBER:
2520475	306-420-04, 05, 10	679136

This agreement is made by and between the City of San Diego, a municipal corporation [City] and SEA BREEZE 56, LLC, the owner or duly authorized representative of the owner [Property Owner] of property located at 8092 1/3 Carmel Mountain Road San Diego, CA 92129 (PROPERTY ADDRESS) and more particularly described as: Lots "A", "D -"F" of Merge 56 Unit 1 Map 16433, Lot "G" of Merge 56 Unit 2 Map (LEGAL DESCRIPTION OF PROPERTY) in the City of San Diego, County of San Diego, State of California.

Property Owner is required pursuant to the City of San Diego Municipal Code, Chapter 4, Article 3, Division 3, Chapter 14, Article 2, Division 2, and the Land Development Manual, Storm Water Standards to enter into a Storm Water Management and Discharge Control Maintenance Agreement [Maintenance Agreement] for the installation and maintenance of Permanent Storm Water Best Management Practices [Permanent Storm Water BMP's] prior to the issuance of construction permits. The Maintenance Agreement is intended to ensure the establishment and maintenance of Permanent Storm Water BMP's onsite, as described in the attached exhibit(s), the project's Storm Water Quality Management Plan [SWQMP] and Grading and/or Improvement Plan Drawing No(s), or Building Plan Project No(s): 40552-D.

Property Owner wishes to obtain a building or engineering permit according to the Grading and/or Improvement Plan Drawing No(s) or Building Plan Project No(s): 40552-D.

Continued on Page 2

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This Maintenance Agreement shall commence upon execution of this document by all parties named hereon, and shall run with the land.

Executed by the City of San Diego and by Property Owner in San Diego, California.

See Attached Exhibit(s): "A"

(Owner Signature)

Gary Levitt, President
(Print Name and Title)

Sea Breeze 56, LLC
(Company/Organization Name)

04/22/2021
(Date)

THE CITY OF SAN DIEGO

APPROVED:

(City Control Engineer Signature)

(Print Name)

(Date)

NOTE: ALL SIGNATURES MUST INCLUDE NOTARY ACKNOWLEDGMENTS PER CIVIL CODE SEC. 1180 ET.SEQ.

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT **CIVIL CODE § 1189**

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of San Diego)

On 4-22-2021 before me, Ciomara Galeano, Notary Public,
Date *Here Insert Name and Title of the Officer*

personally appeared Gary Levitt
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

CIOMARA GALEANO
Notary Public - California
San Diego County
Commission # 2281038
My Comm. Expires Mar 15, 2023

Signature _____
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

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Description of Attached Document

Title or Type of Document: _____ Document Date: _____

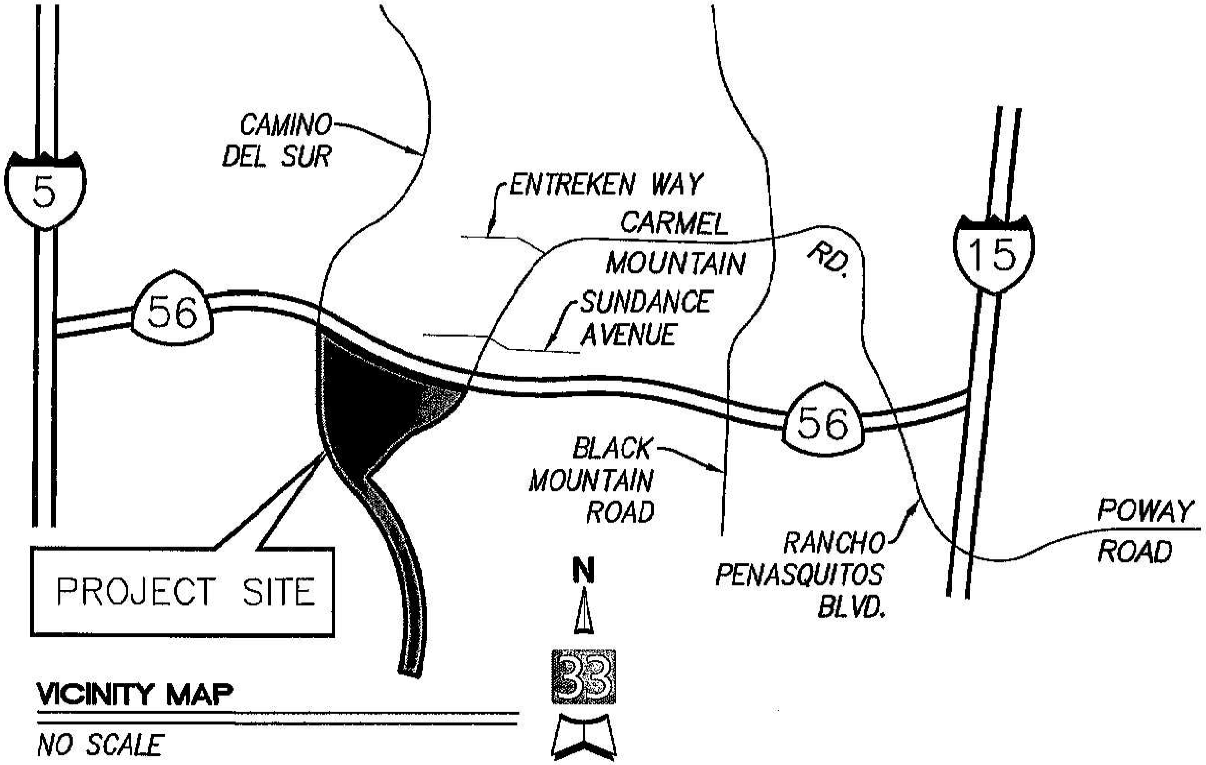
Number of Pages: _____ Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator
☐ Other: _____
Signer Is Representing: _____

Signer's Name: _____
☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator
☐ Other: _____
Signer Is Representing: _____

POST-CONSTRUCTION PERMANENT BMP – EXHIBIT 'A'
MERGE 56 ONSITE UNIT 1 DMAS 1 – 9 – SWMDCMA
SHEET 1 OF 15



VICINITY MAP

NO SCALE

POST-CONSTRUCTION BMP NOTES

- *ANY MODIFICATION(S) TO THE PERMANENT POST CONSTRUCTION BMP DEVICES/STRUCTURE SHOWN ON PLAN REQUIRES A CONSTRUCTION CHANGE TO BE PROCESSED AND APPROVED THOUGH DEVELOPMENT SERVICE DEPARTMENT BY THE ENGINEERING OF WORK. APPROVAL OF THE CONSTRUCTION CHANGE IS REQUIRED PRIOR TO CONSTRUCTION OF THE PERMANENT BMP.*

SITE MAP NOTES

- *NO MATERIALS TO BE EXPOSED TO STORMWATER RUNOFF*
- *NO BUILDING OR POLLUTANT GENERATING ACTIVITY AREAS ARE PROPOSED (FUELING, GARAGES, WASTE CONTAINERS, WASH RACKS, HAZARDOUS MATERIALS)*
- *NO ONSITE AREAS OF POTENTIAL EROSION*
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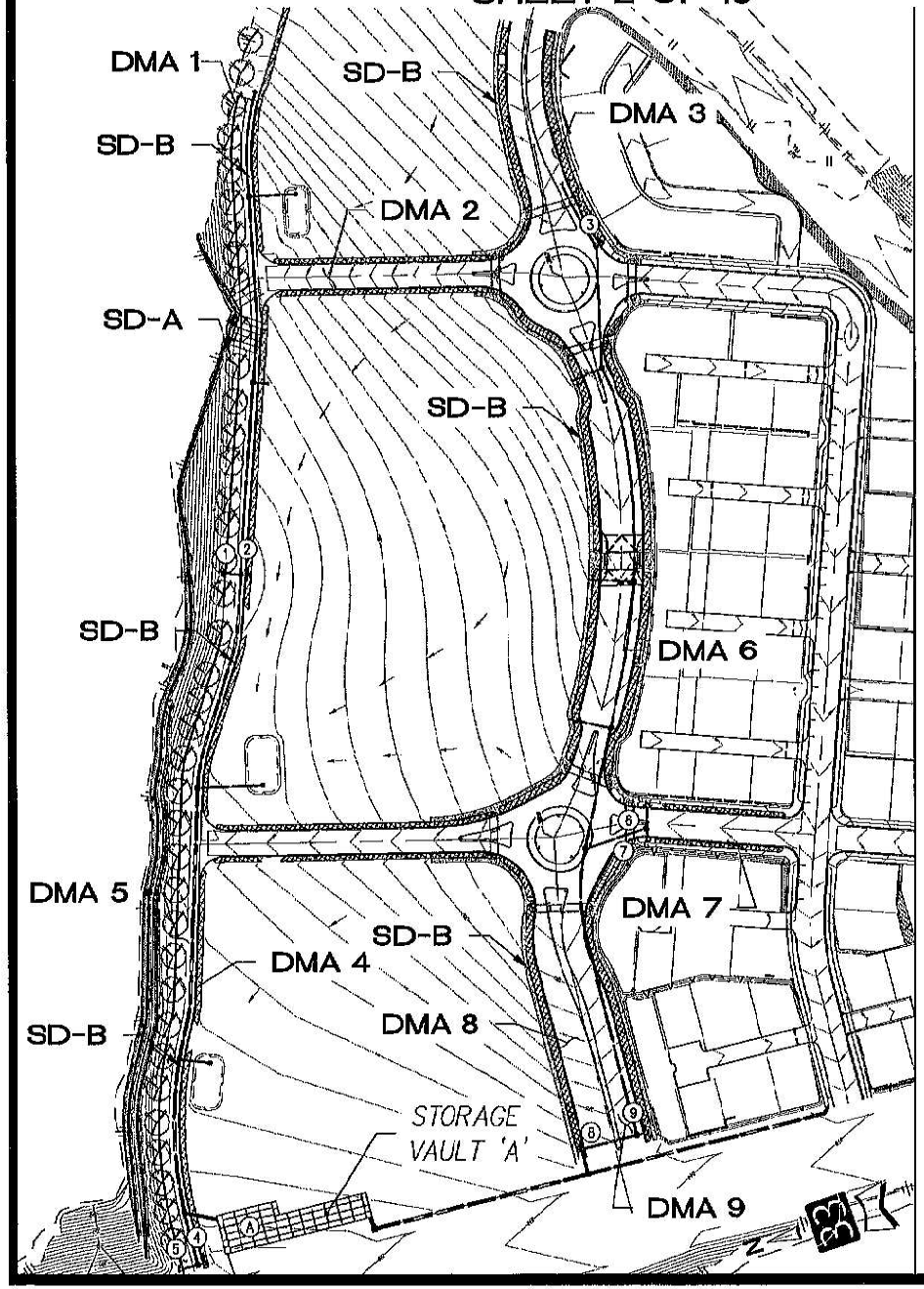
POST-CONSTRUCTION PERMANENT BMP EXHIBIT 'A'
MERGE 56 ONSITE UNIT 1 DMAS 1 - 9 -SWMDCMA
SHEET 2 OF 15



MODULAR WETLANDS SYSTEM TABLE		
BMP	AREA OR FLOW RATE	ORIFICE DIAMETER (IN)
1	MWS L-4-8, Q=0.115CFS (32 SF)	–
2	MWS L-8-12, Q=0.346CFS (96 SF)	–
3	MWS L-4-6, Q=0.073CFS (24 SF)	–
4	MWS L-8-12 Q=0.346CFS (96 SF)	–
5	MWS L-4-6, Q=0.073CFS (24 SF)	–
6	MWS L-4-17, Q=0.175CFS (90 SF)	–
7	MWS L-4-4, Q=0.052CFS (16 SF)	–
8	MWS L-4-8, Q=0.115CFS (32 SF)	–
9	MWS L-4-8, Q=0.115CFS (32 SF)	–

HYDROMODIFICATION TABLE		
BMP	AREA OR FLOW RATE	ORIFICE DIAMETER (IN)
21	STORMTRAP STORAGE VAULT A (85,305 CF)	6.5"

LANDSCAPE FOR VOLUME RETENTION

MERGE 56 SWQMP
CC'A' ADDENDUM
PTS 679136 &679132

POST-CONSTRUCTION PERMANENT BMP EXHIBIT 'A'
MERGE 56 ONSITE UNIT 1 DMAS 1 - 9 -SWMDCMA
SHEET 3 OF 15

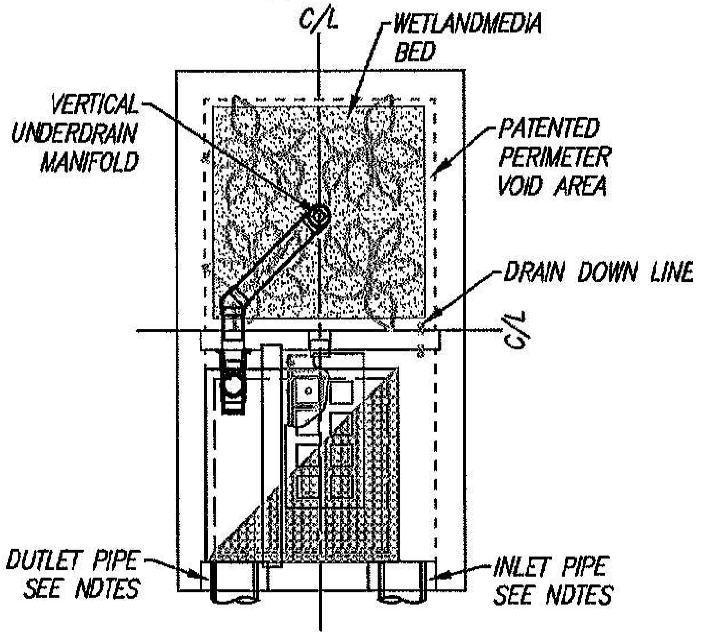
POST-CONSTRUCTION PERMANENT BMP OPERATION + MAINTENANCE PROCEDURE DETAILS

STORM WATER MANAGEMENT AND DISCHARGE CONTROL MAINTENANCE AGREEMENT APPROVAL NO.: 2520475

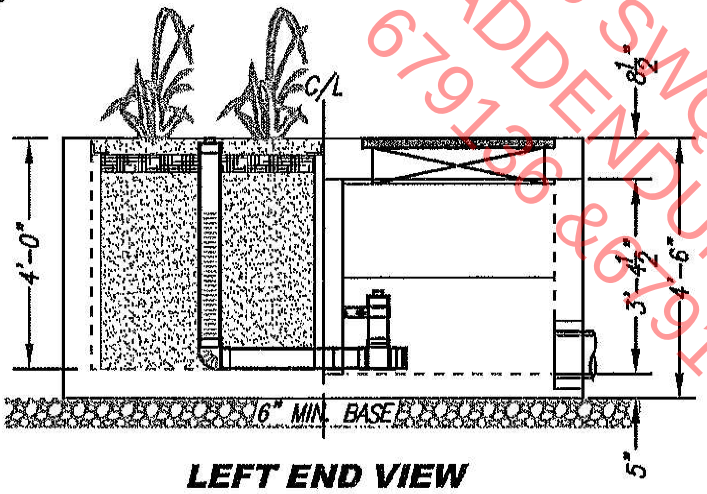
O&M RESPONSIBLE PARTY DESIGNEE: PROPERTY OWNER (SEA BREEZE PROPERTIES, LLC)

BMP DESCRIPTION	MAINTENANCE TASK	MAINTENANCE FREQUENCY	MAINTENANCE METHOD	QUANTITY	SHEET NUMBER(S)
POLLUTANT CONTROL					
MODULAR WETLANDS SYSTEM	TRASH & SEDIMENT REMOVAL	EVERY 6-24 MONTHS	TASKS INCLUDE TRASH REMOVAL FROM SCREENING DEVICE AND SEDIMENT REMOVAL FROM SEPARATION CHAMBER.	9	24-26, 34-37
	REPLACE FILTER MEDIA	EVERY 12-24 MONTHS	REPLACE CARTRIDGE FILTER MEDIA AND DRAIN DOWN FILTER MEDIA.		
	TRIM VEGETATION	EVERY 6-12 MONTHS	PRUNE VEGETATION AND REMOVE AND REPLACE ANY DEAD PLANTS.		
HYDROMODIFICATION					
STORM CAPTURE VAULTS	VAULT INSPECTION	EVERY 6 MONTHS	INSPECT AND VACUUM IF NECESSARY. CLEAR ORIFICE (D=.50") OF ANY DEBRIS.	1	24, 34, 38-40

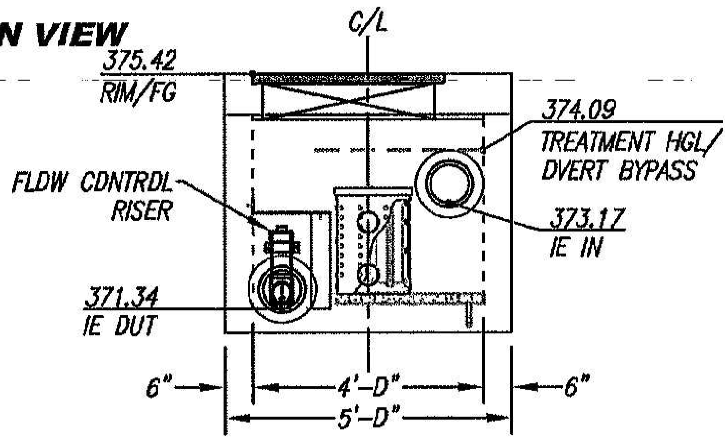
POST-CONSTRUCTION PERMANENT BMP EXHIBIT 'A'
MERGE 56 ONSITE UNIT 1 DMAS 1 - 9 -SWMDCMA
SHEET 4 OF 15



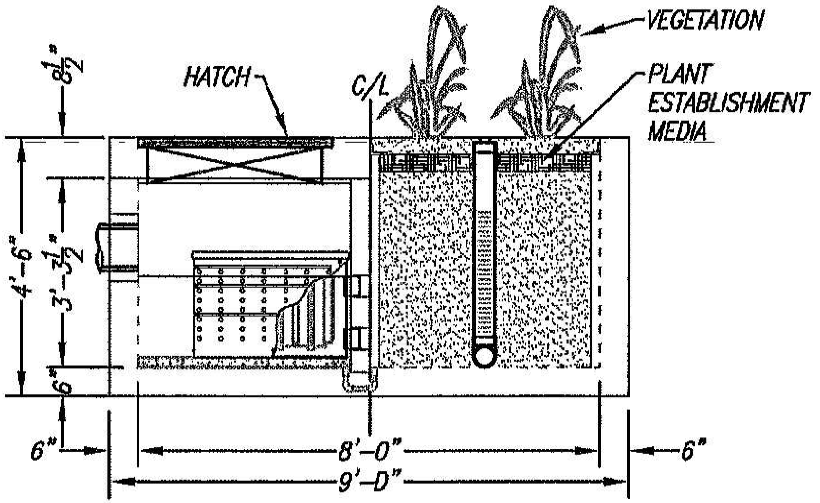
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW

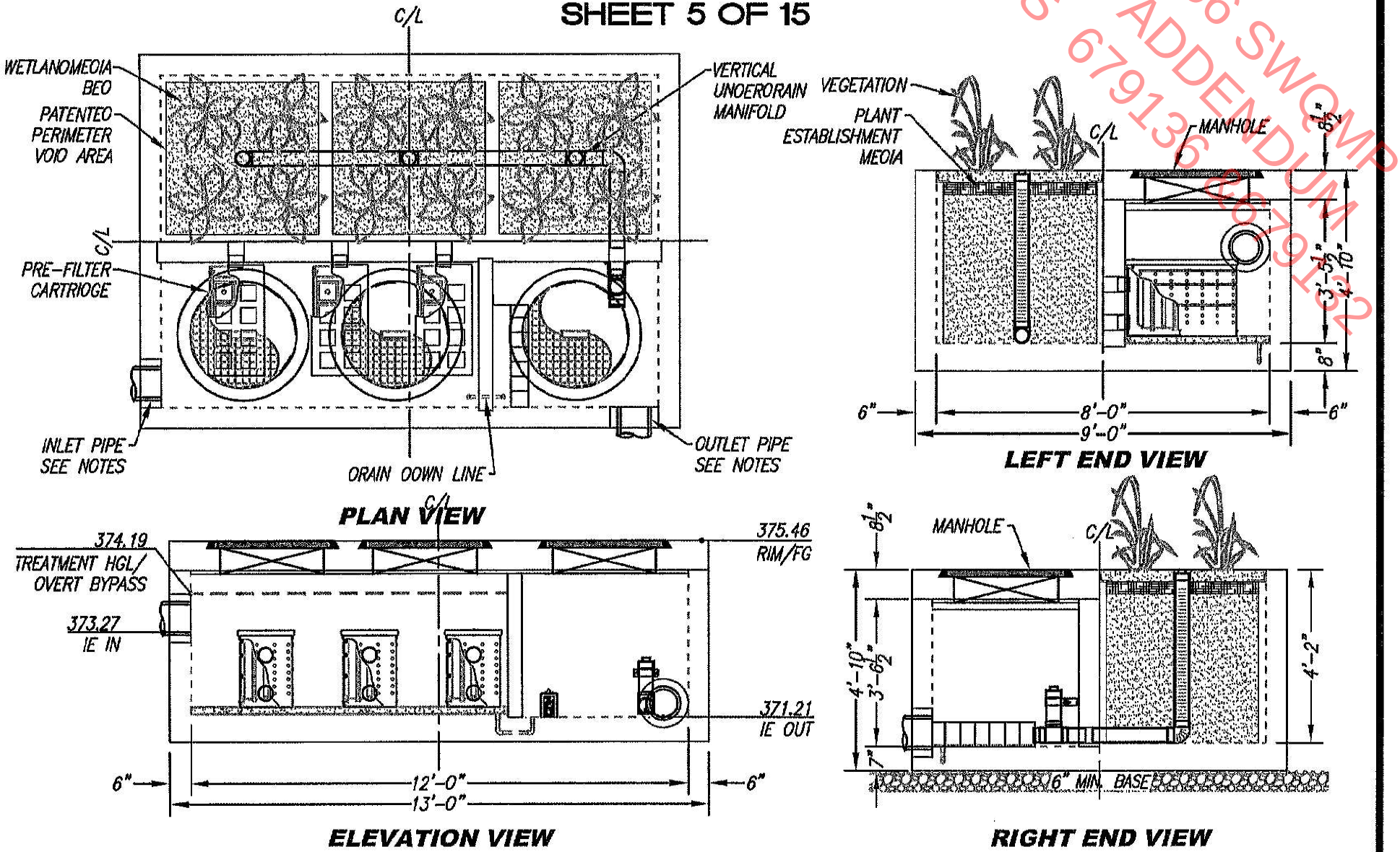


RIGHT END VIEW

BMP #1: MODULAR WETLANDS MWS-L-4-8

NOT TO SCALE

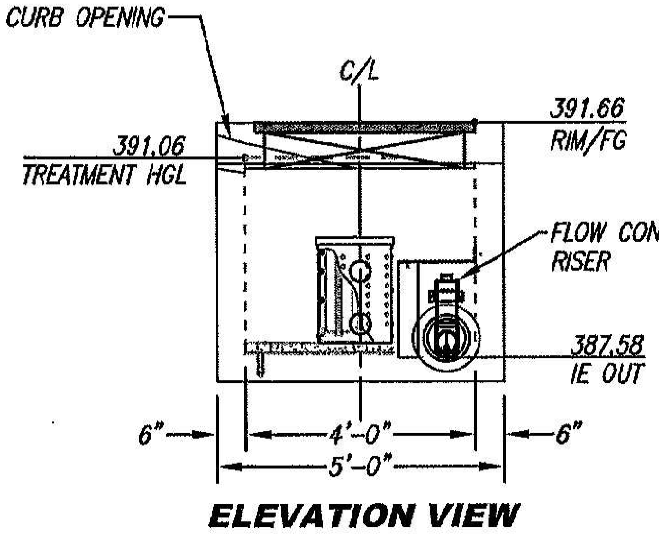
POST-CONSTRUCTION PERMANENT BMP EXHIBIT 'A'
MERGE 56 ONSITE UNIT 1 DMAS 1 - 9 -SWMDCMA
SHEET 5 OF 15



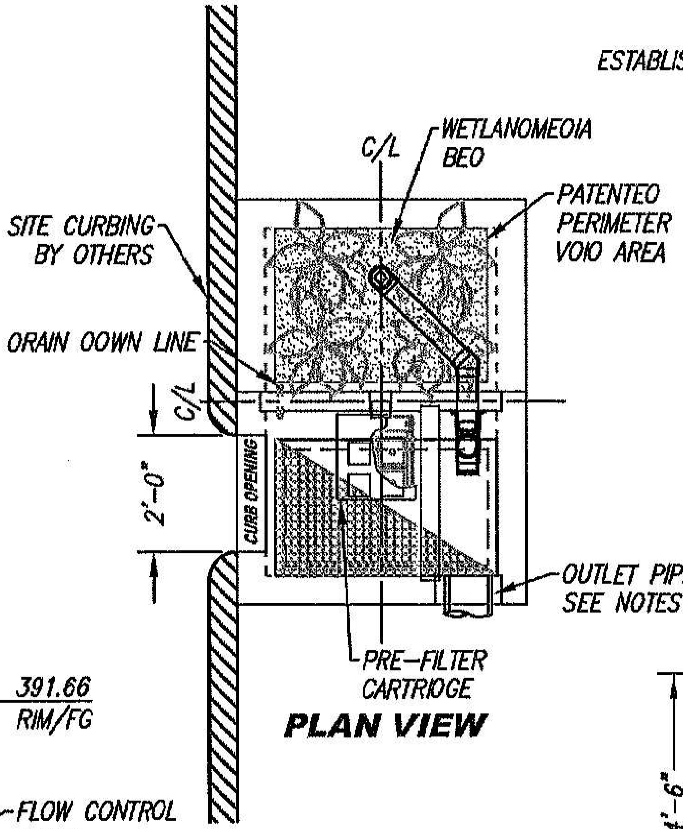
BMP #2: MODULAR WETLANDS MWS-L-8-12

NOT TO SCALE

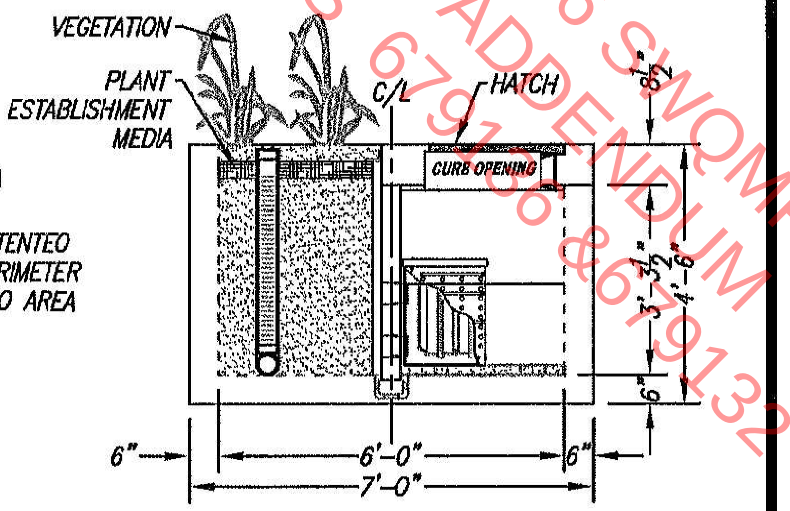
POST-CONSTRUCTION PERMANENT BMP EXHIBIT 'A'
MERGE 56 ONSITE UNIT 1 DMAS 1 - 9 -SWMDCMA
SHEET 6 OF 15



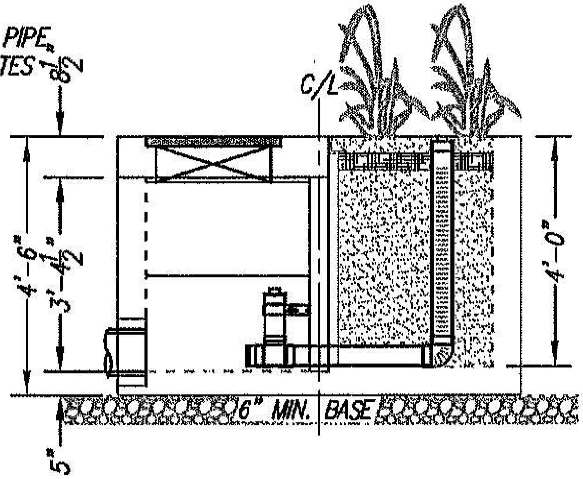
ELEVATION VIEW



PLAN VIEW



LEFT END VIEW

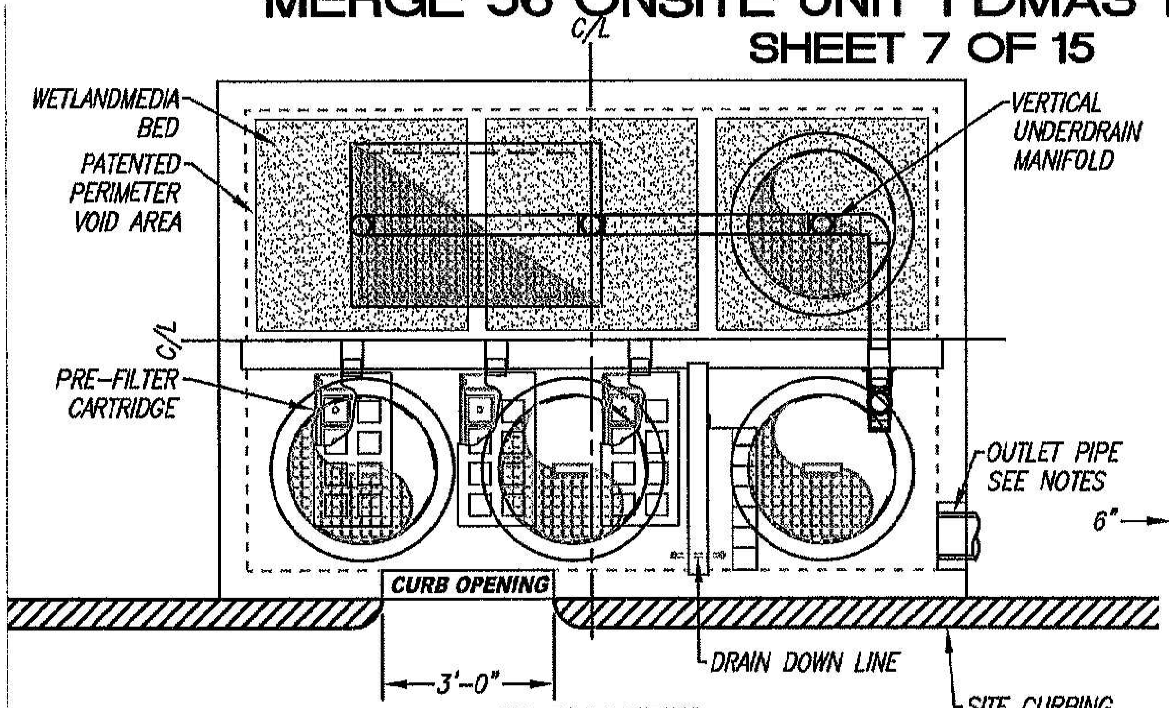


RIGHT END VIEW

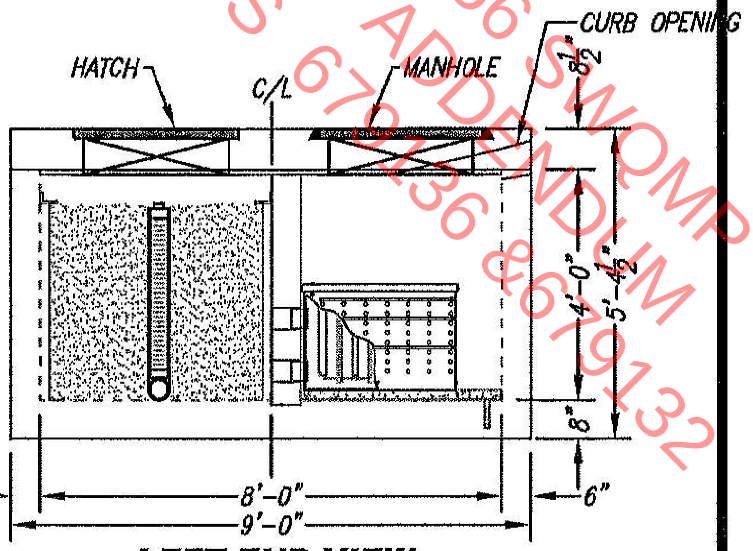
BMP #3: MODULAR WETLANDS MWS-L-4-6

NOT TO SCALE

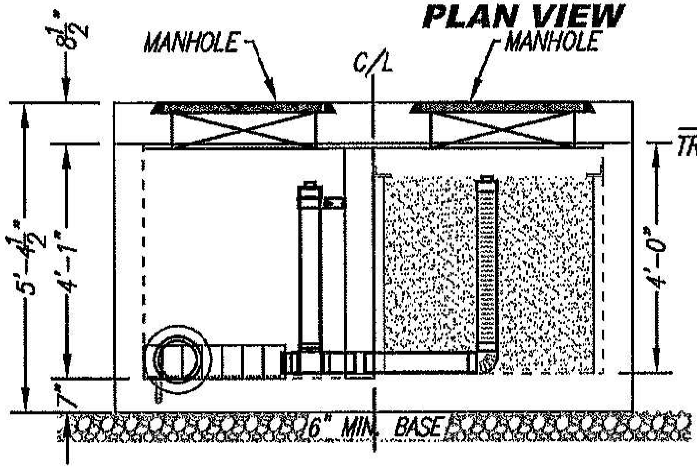
POST-CONSTRUCTION PERMANENT BMP EXHIBIT 'A'
MERGE 56 ONSITE UNIT 1 DMAS 1 - 9 -SWMDCMA
SHEET 7 OF 15



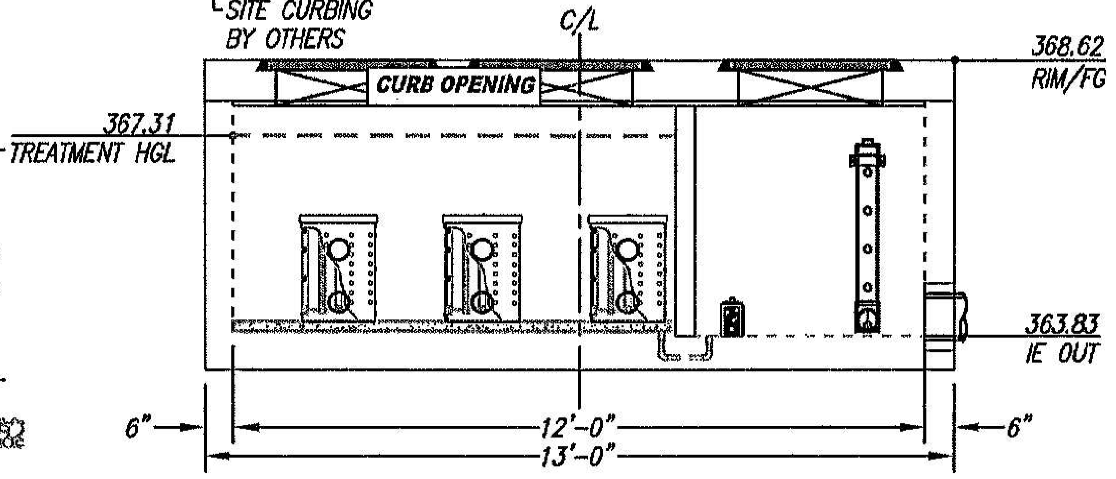
PLAN VIEW



LEFT END VIEW



RIGHT END VIEW

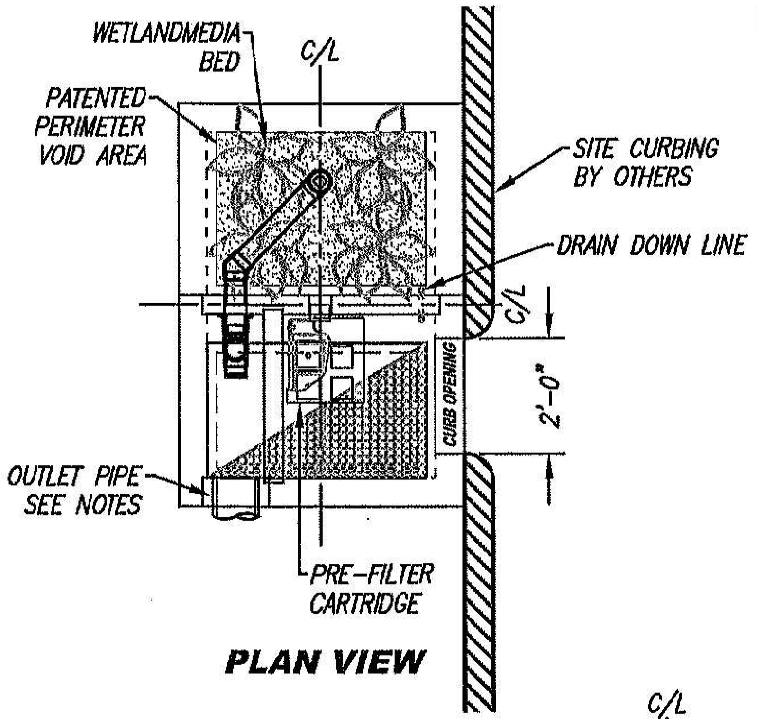


ELEVATION VIEW

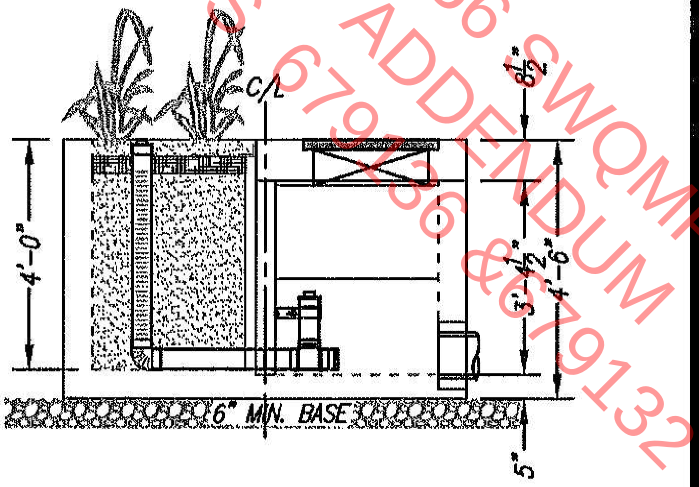
BMP #4: MODULAR WETLANDS MWS-L-8-12

NOT TO SCALE

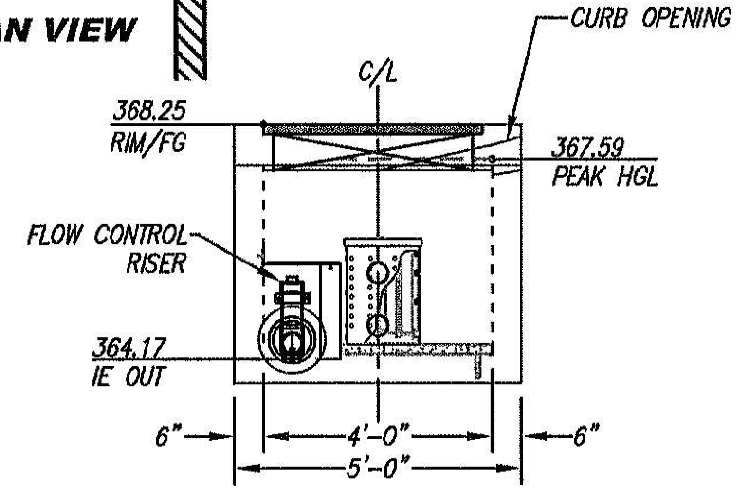
POST-CONSTRUCTION PERMANENT BMP EXHIBIT 'A'
MERGE 56 ONSITE UNIT 1 DMAS 1 - 9 -SWMDCMA
SHEET 8 OF 15



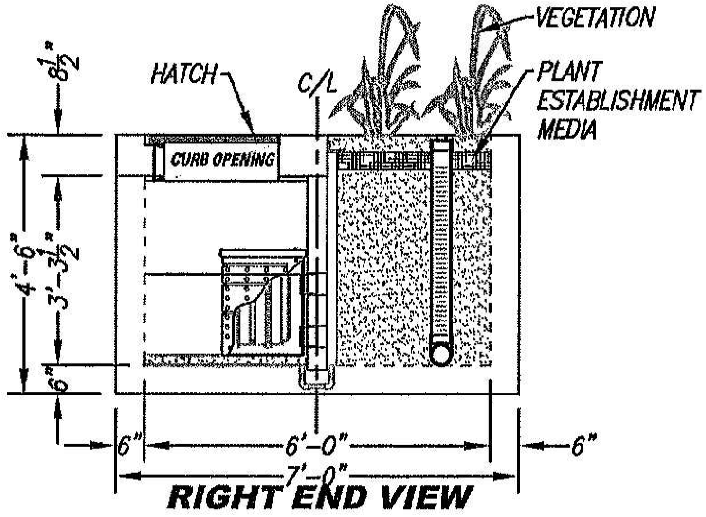
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW

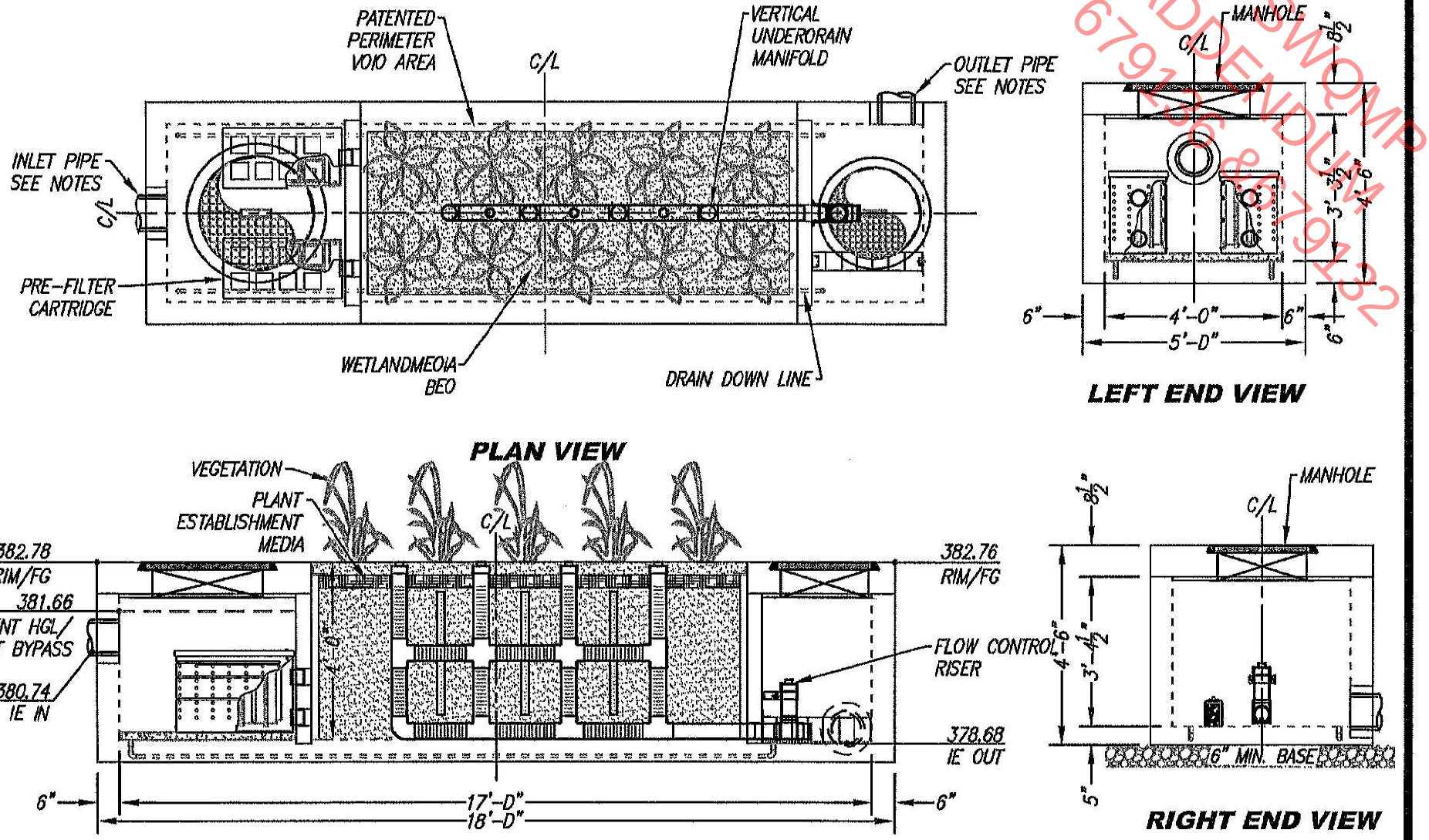


RIGHT END VIEW

BMP #5: MODULAR WETLANDS MWS-L-4-6

NOT TO SCALE

POST-CONSTRUCTION PERMANENT BMP EXHIBIT 'A'
MERGE 56 ONSITE UNIT 1 DMAS 1 - 9 -SWMDCMA
SHEET 9 OF 15



BMP #6: MODULAR WETLANDS MWS-L-4-17

NOT TO SCALE

POST-CONSTRUCTION PERMANENT BMP EXHIBIT 'A'
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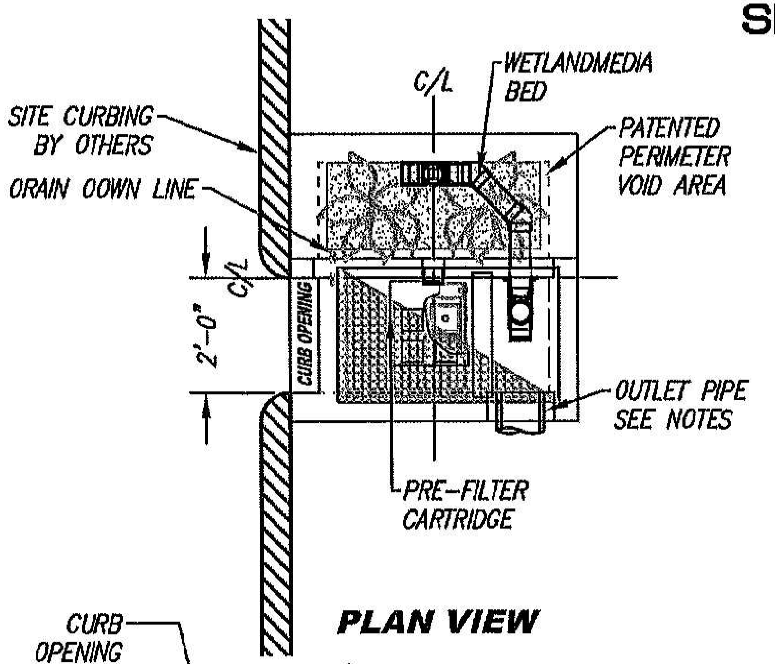
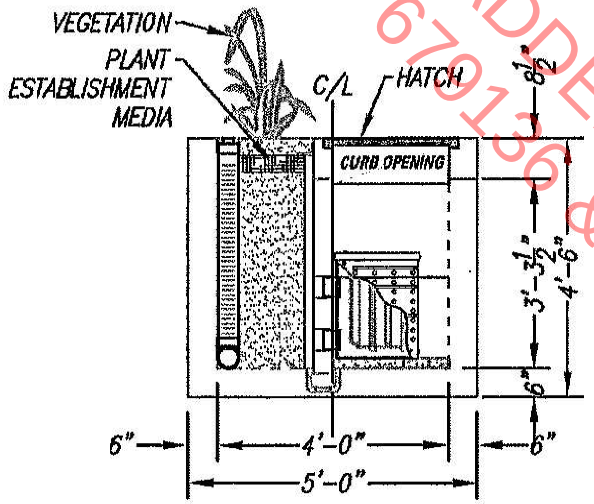
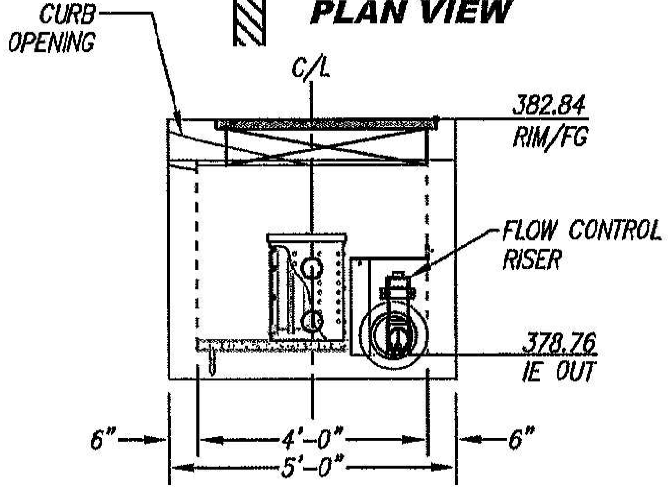
SHEET 10 OF 15



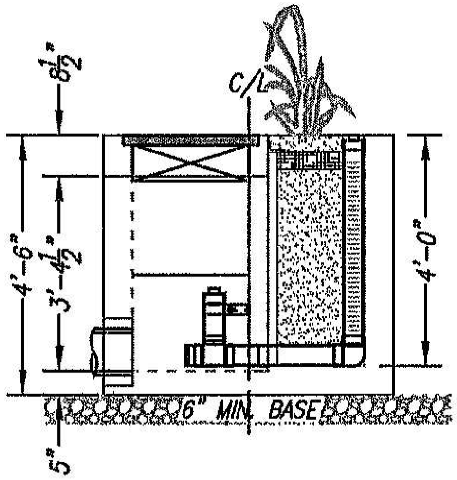
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW

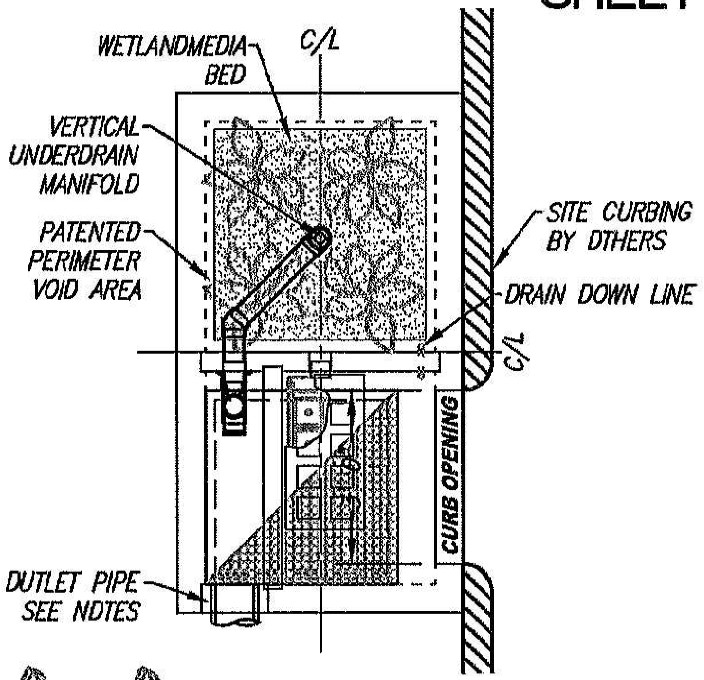


RIGHT END VIEW

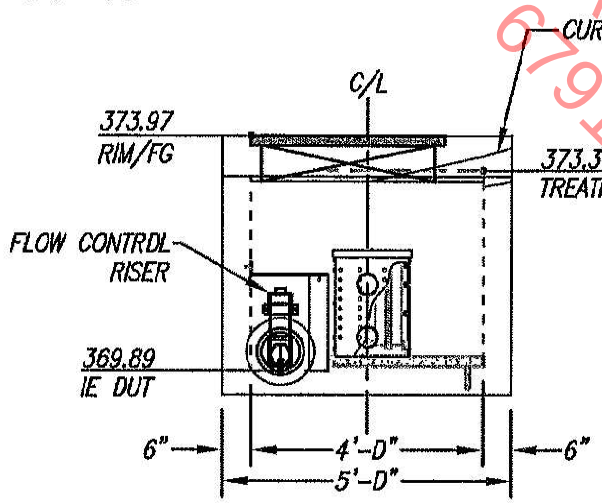
BMP #7: MODULAR WETLANDS MWS-L-4-4

NOT TO SCALE

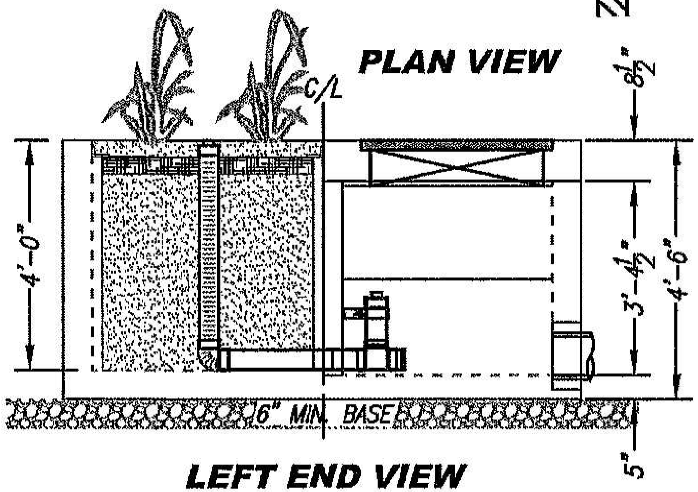
POST-CONSTRUCTION PERMANENT BMP EXHIBIT 'A'
MERGE 56 ONSITE UNIT 1 DMAS 1 - 9 -SWMDCMA
SHEET 11 OF 15



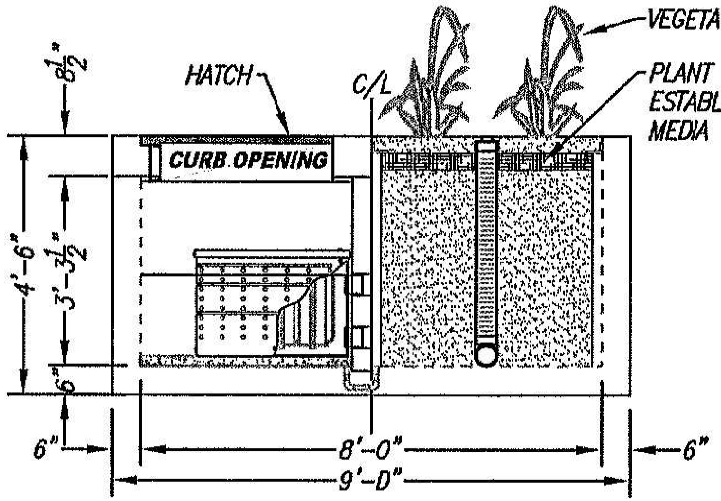
PLAN VIEW



ELEVATION VIEW



LEFT END VIEW



RIGHT END VIEW

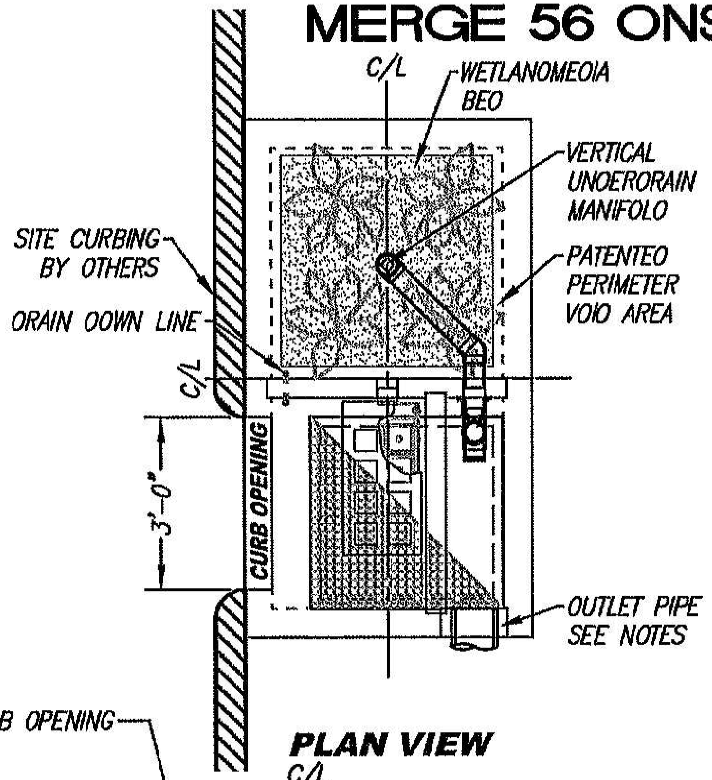
BMP #8: MODULAR WETLANDS MWS-L-4-8

NOT TO SCALE

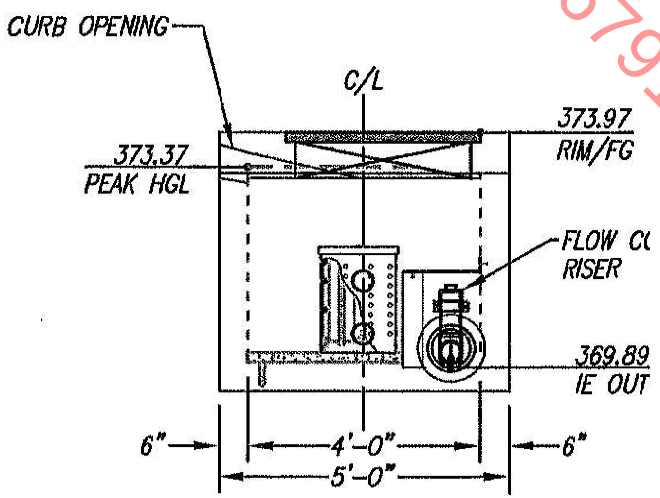
POST-CONSTRUCTION PERMANENT BMP EXHIBIT 'A'

MERGE 56 ONSITE UNIT 1 DMAS 1 - 9 -SWMDCMA

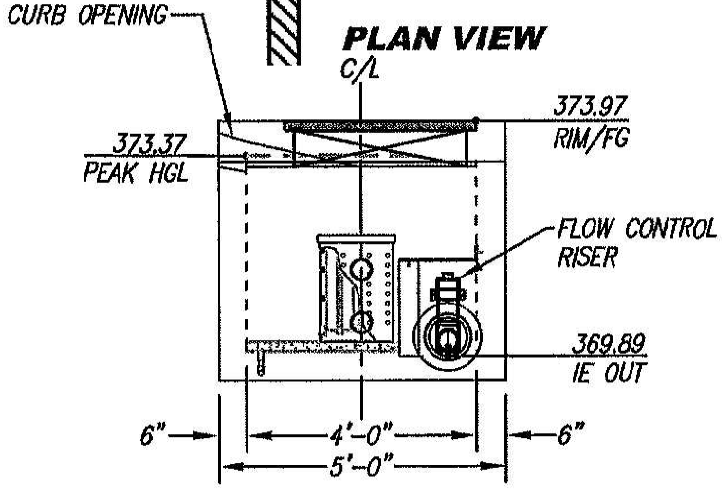
SHEET 12 OF 15



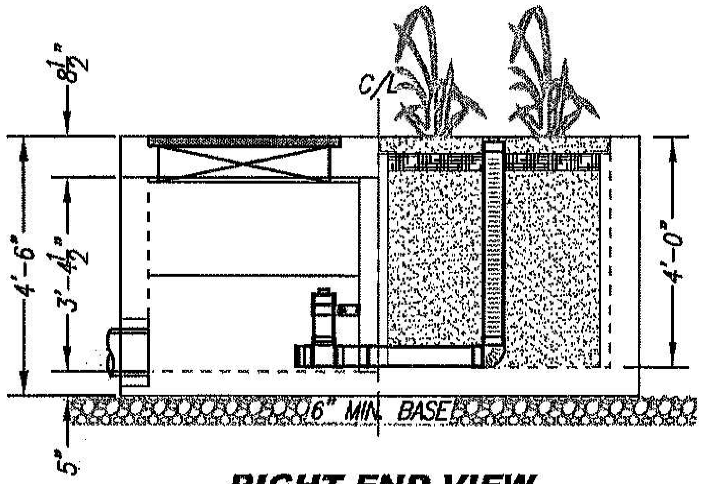
PLAN VIEW



ELEVATION VIEW



ELEVATION VIEW

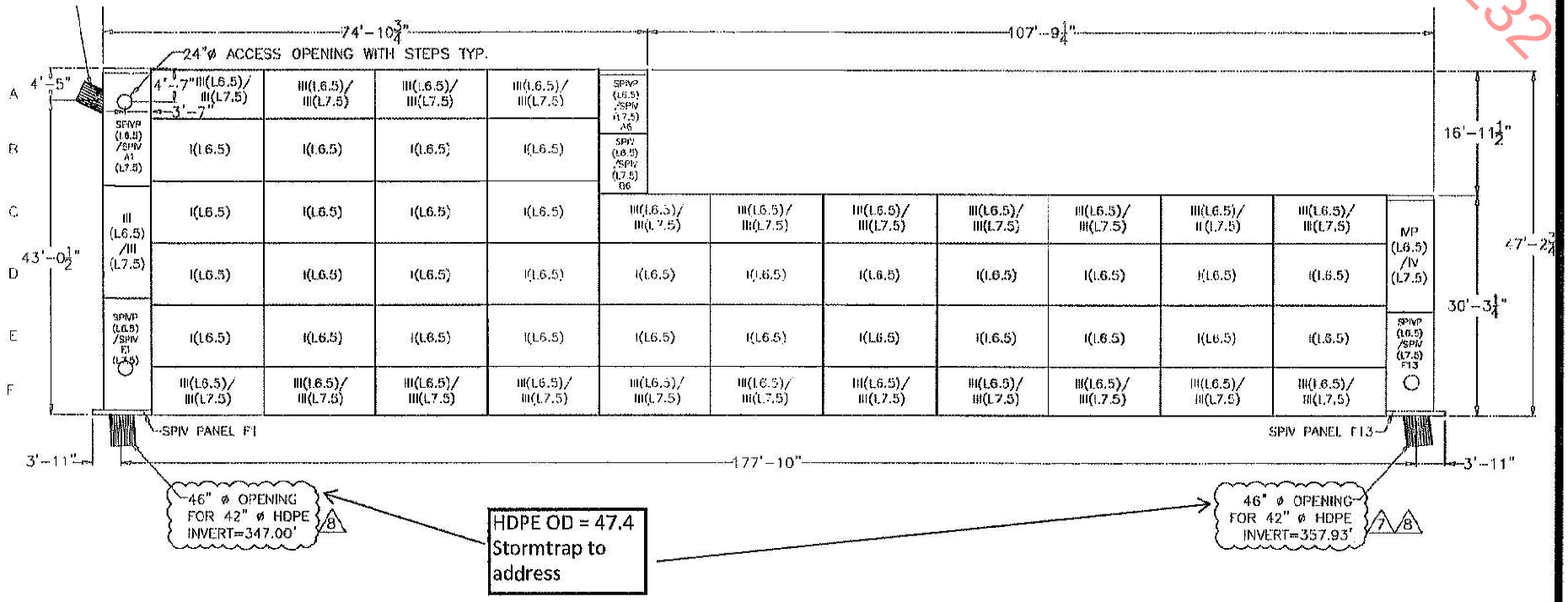


RIGHT END VIEW

BMP #9: MODULAR WETLANDS MWS-L-4-8

NOT TO SCALE

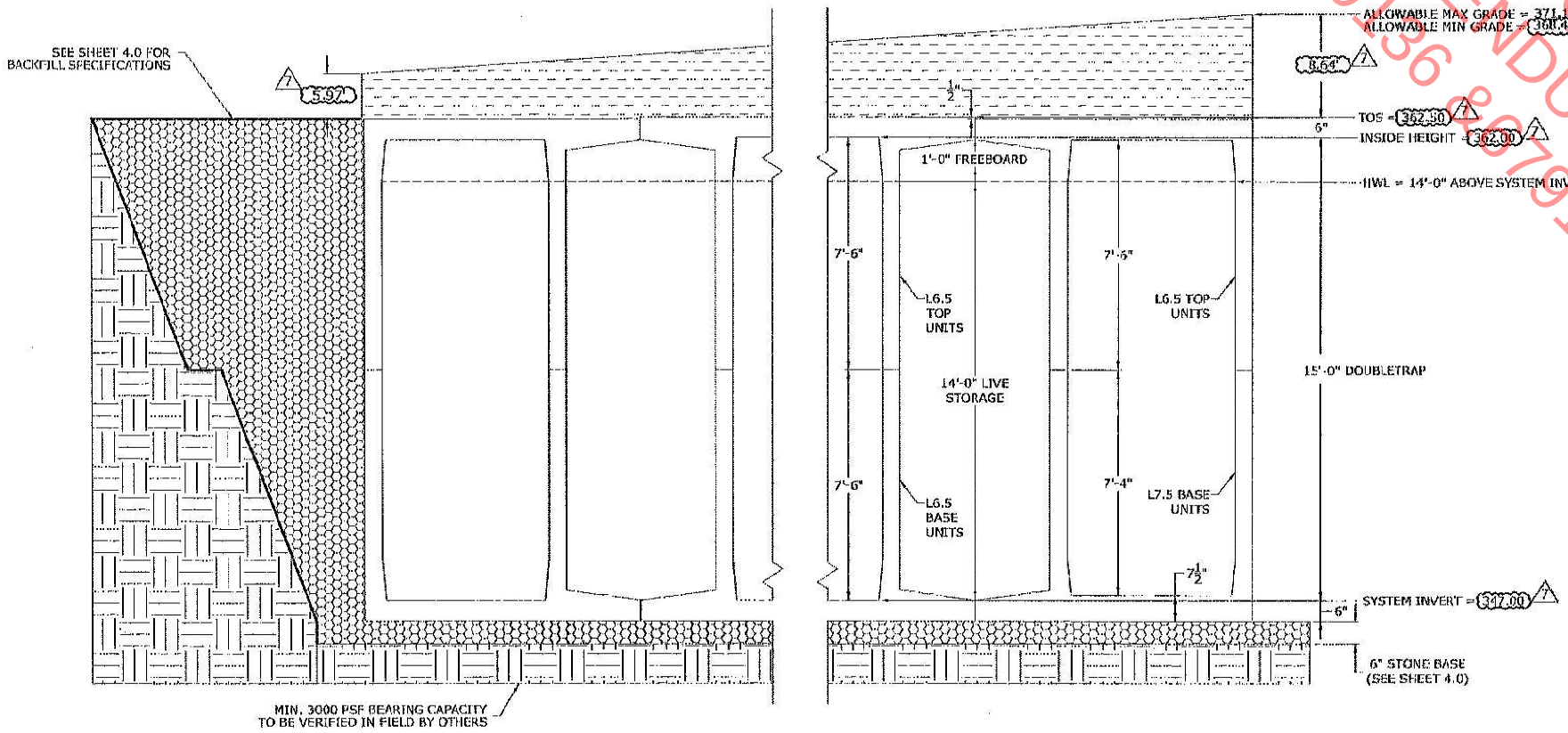
POST-CONSTRUCTION PERMANENT BMP EXHIBIT 'A'
MERGE 56 ONSITE UNIT 1 DMAS 1 - 9 -SWMDCMA
SHEET 13 OF 15



VAULT A: STORMTRAP STORAGE VAULTS

NOT TO SCALE

POST-CONSTRUCTION PERMANENT BMP EXHIBIT 'A'
MERGE 56 ONSITE UNIT 1 DMAS 1 - 9 -SWMDCMA
SHEET 14 OF 15

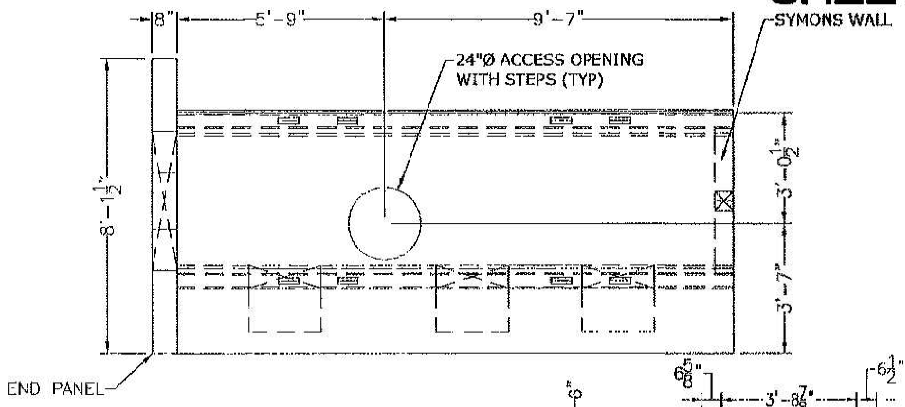


15'-0" DOUBLETRAP

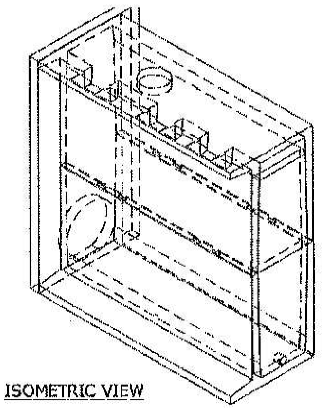
VAULT A: STORMTRAP STORAGE VAULTS

NOT TO SCALE

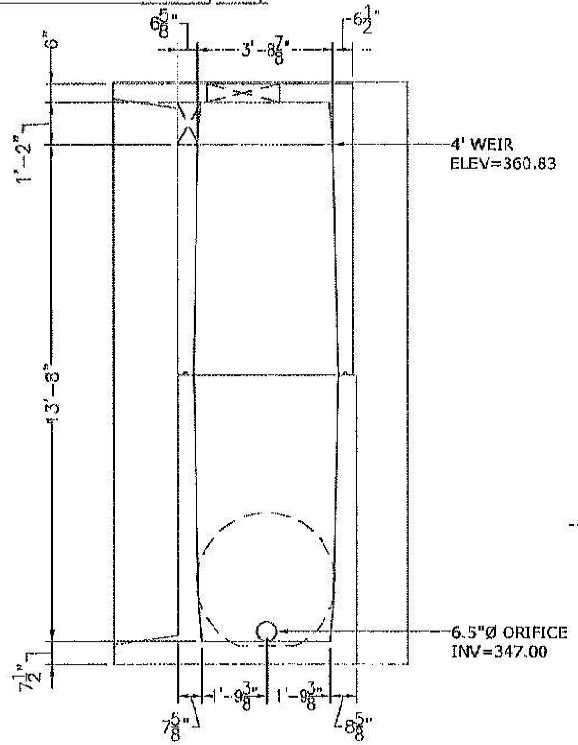
POST-CONSTRUCTION PERMANENT BMP EXHIBIT 'A'
MERGE 56 ONSITE UNIT 1 DMAS 1 - 9 -SWMDCMA
SHEET 15 OF 15



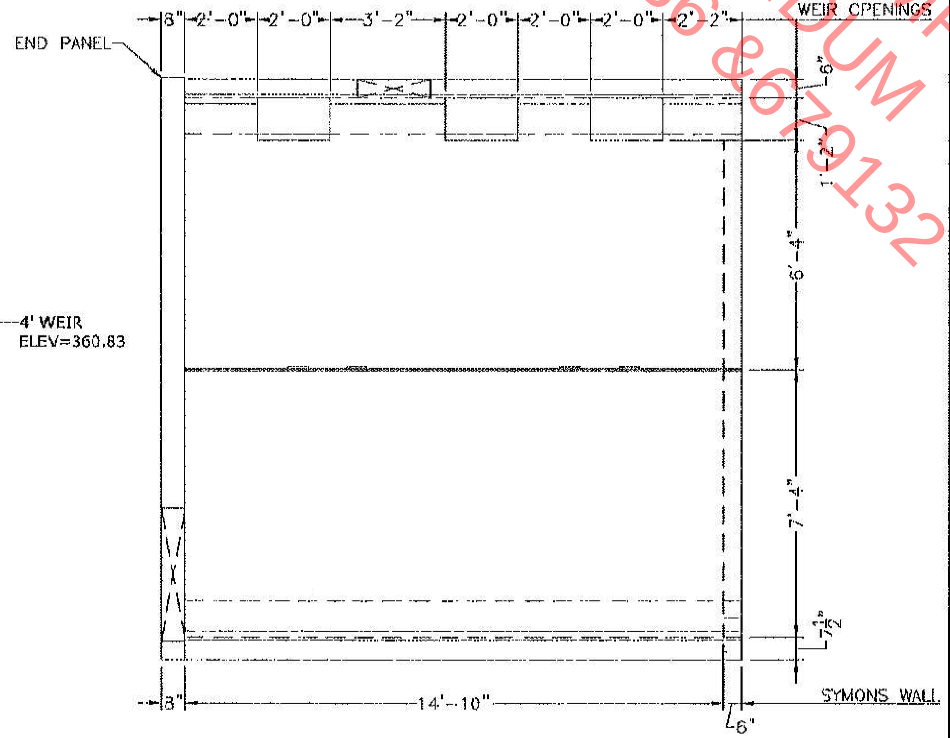
PLAN VIEW



ISOMETRIC VIEW



SIDE VIEW



ELEVATION VIEW

VAULT A: STORMTRAP STORAGE VAULTS

NOT TO SCALE

The City of SAN DIEGO

RECORDING REQUESTED BY:
THE CITY OF SAN DIEGO AND
WHEN RECORDED MAIL TO:
Latitude 33 Planning & Engineering
9968 Hibert St., 2nd Floor
San Diego, CA 92131

(THIS SPACE IS FOR RECORDER'S USE ONLY)

STORM WATER MANAGEMENT AND DISCHARGE CONTROL MAINTENANCE AGREEMENT

APPROVAL NUMBER:	ASSESSORS PARCEL NUMBER:	PROJECT NUMBER:
2505415	306-420-04, 10	679132

This agreement is made by and between the City of San Diego, a municipal corporation [City] and SEA BREEZE 56, LLC, the owner or duly authorized representative of the owner [Property Owner] of property located at 8162 1/3 Carmel Mountain Road San Diego, CA 92129 (PROPERTY ADDRESS) and more particularly described as: Lots 1-87, "A"-"F" of Merge 56 Unit 2 Map _____, Lot 7 of Merge 56 Unit 1 Map 16433 (LEGAL DESCRIPTION OF PROPERTY) in the City of San Diego, County of San Diego, State of California.

Property Owner is required pursuant to the City of San Diego Municipal Code, Chapter 4, Article 3, Division 3, Chapter 14, Article 2, Division 2, and the Land Development Manual, Storm Water Standards to enter into a Storm Water Management and Discharge Control Maintenance Agreement [Maintenance Agreement] for the installation and maintenance of Permanent Storm Water Best Management Practices [Permanent Storm Water BMP's] prior to the issuance of construction permits. The Maintenance Agreement is intended to ensure the establishment and maintenance of Permanent Storm Water BMP's onsite, as described in the attached exhibit(s), the project's Storm Water Quality Management Plan [SWQMP] and Grading and/or Improvement Plan Drawing No(s), or Building Plan Project No(s): 40553-D.

Property Owner wishes to obtain a building or engineering permit according to the Grading and/or Improvement Plan Drawing No(s) or Building Plan Project No(s): 40553-D.

Continued on Page 2

NOW, THEREFORE, the parties agree as follows:

1. Property Owner shall have prepared, or if qualified, shall prepare an Operation and Maintenance Procedure [OMP] for Permanent Storm Water BMP's, satisfactory to the City, according to the attached exhibit(s), consistent with the Grading and/or Improvement Plan Drawing No(s), or Building Plan Project No(s): 40553-D .

2. Property Owner shall install, maintain and repair or replace all Permanent Storm Water BMP's within their property, according to the OMP guidelines as described in the attached exhibit(s), the project's SWQMP and Grading and/or Improvement Plan Drawing No(s), or Building Plan Project No(s) 40553-D .

3. Property Owner shall maintain operation and maintenance records for at least five (5) years. These records shall be made available to the City for inspection upon request at any time.

This Maintenance Agreement shall commence upon execution of this document by all parties named hereon, and shall run with the land.

Executed by the City of San Diego and by Property Owner in San Diego, California.

"A", "B", "C"

See Attached Exhibit(s): "A", "B", "C"

(Owner Signature)

Gary Levitt, President
(Print Name and Title)

Sea Breeze 56, LLC
(Company/Organization Name)

04/22/2021
(Date)

THE CITY OF SAN DIEGO

APPROVED:

(City Control Engineer Signature)

(Print Name)

(Date)

NOTE: ALL SIGNATURES MUST INCLUDE NOTARY ACKNOWLEDGMENTS PER CIVIL CODE SEC. 1180 ET.SEQ.

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT **CIVIL CODE § 1189**

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
County of San Diego)

On 4-22-2021 before me, Ciomara Galeano, Notary Public,
Date *Here Insert Name and Title of the Officer*

personally appeared Gary Levitt
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/her/~~their~~ authorized capacity(ies), and that by his/her/~~their~~ signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

CIOMARA GALEANO
Notary Public - California
San Diego County
Commission # 2281038
My Comm. Expires Mar 15, 2023

Signature _____
Signature of Notary Public

Place Notary Seal Above

OPTIONAL

Though this section is optional, completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

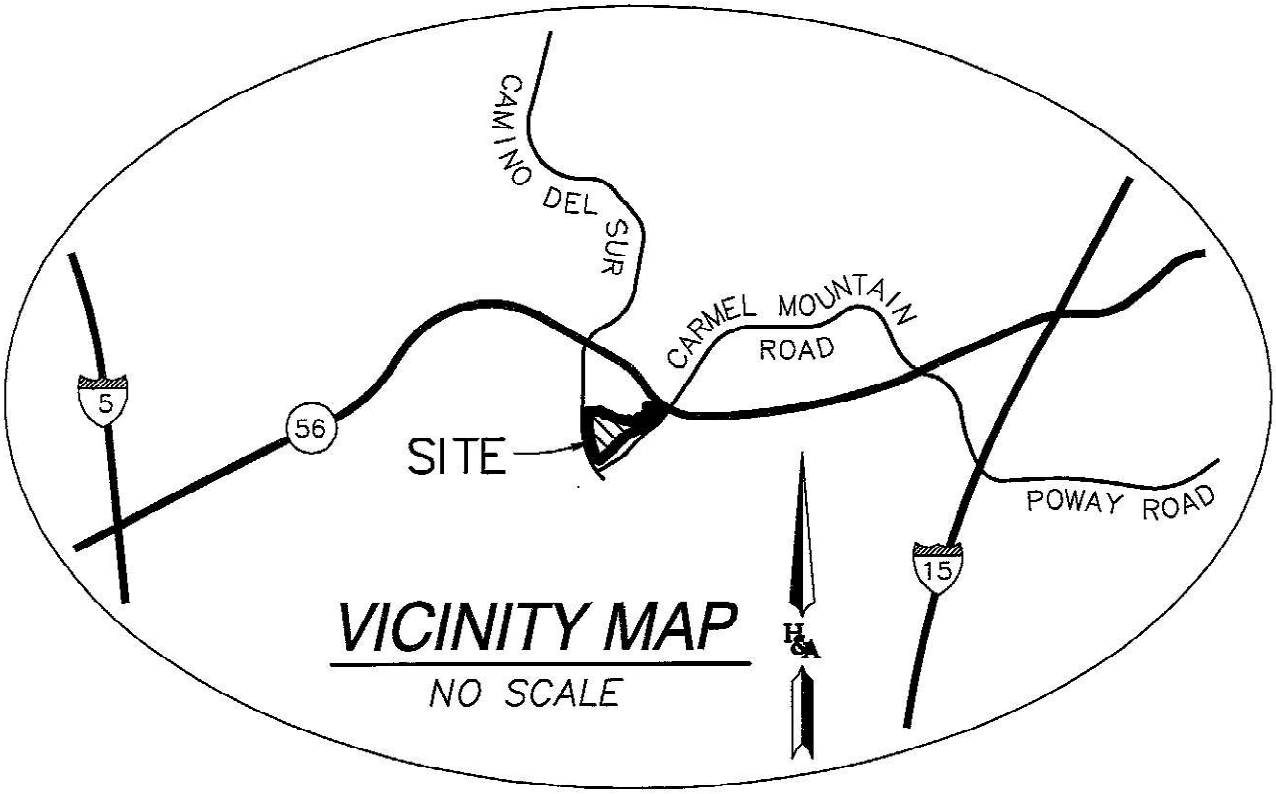
Description of Attached Document

Title or Type of Document: _____ Document Date: _____

Number of Pages: _____ Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____	Signer's Name: _____
☐ Corporate Officer — Title(s): _____	☐ Corporate Officer — Title(s): _____
☐ Partner — ☐ Limited ☐ General	☐ Partner — ☐ Limited ☐ General
☐ Individual ☐ Attorney in Fact	☐ Individual ☐ Attorney in Fact
☐ Trustee ☐ Guardian or Conservator	☐ Trustee ☐ Guardian or Conservator
☐ Other: _____	☐ Other: _____
Signer Is Representing: _____	Signer Is Representing: _____



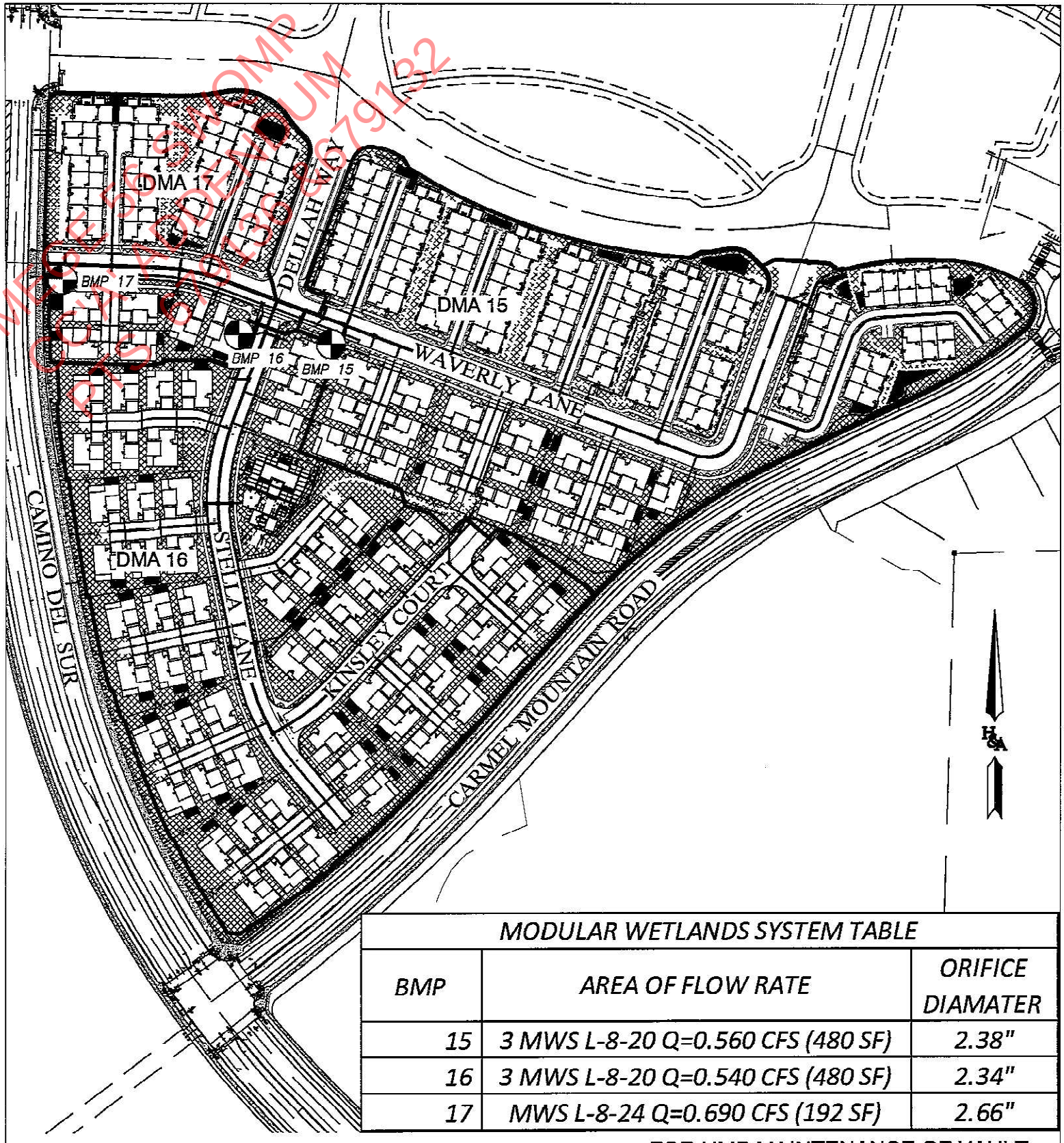
VICINITY MAP

NO SCALE

EXHIBIT A

SWMDCMA (PRIVATE)

MERGE 56 ONSITE UNIT 2 DMAS 15, 16, & 17
CITY OF SAN DIEGO, CALIFORNIA



MODULAR WETLANDS SYSTEM TABLE		
BMP	AREA OF FLOW RATE	ORIFICE DIAMATER
15	3 MWS L-8-20 Q=0.560 CFS (480 SF)	2.38"
16	3 MWS L-8-20 Q=0.540 CFS (480 SF)	2.34"
17	MWS L-8-24 Q=0.690 CFS (192 SF)	2.66"

Landscaped/Pervious Areas
241,800 SQFT

Landscaped Areas Serving as Volume Retention
18,000 SQFT

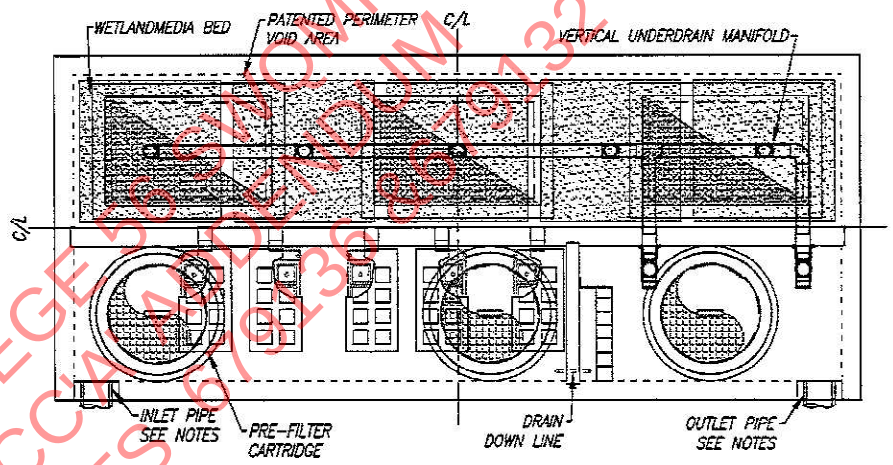
BMP 15 Structural BMP-Compact Proprietary Biofiltration

FOR HMP MAINTENANCE OF VAULT, SEE SWMDCMA APPROVAL #2520475

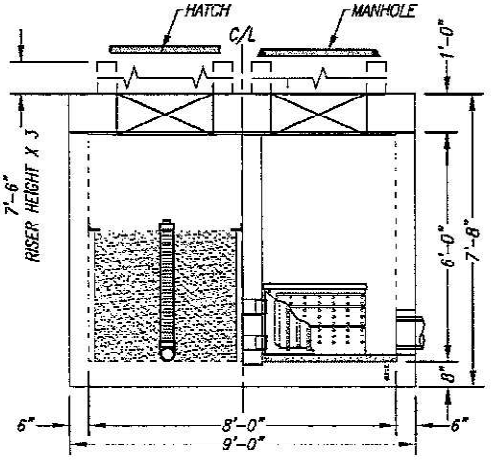
EXHIBIT B, SHEET 1 OF 8

SWMDCMA (PRIVATE)

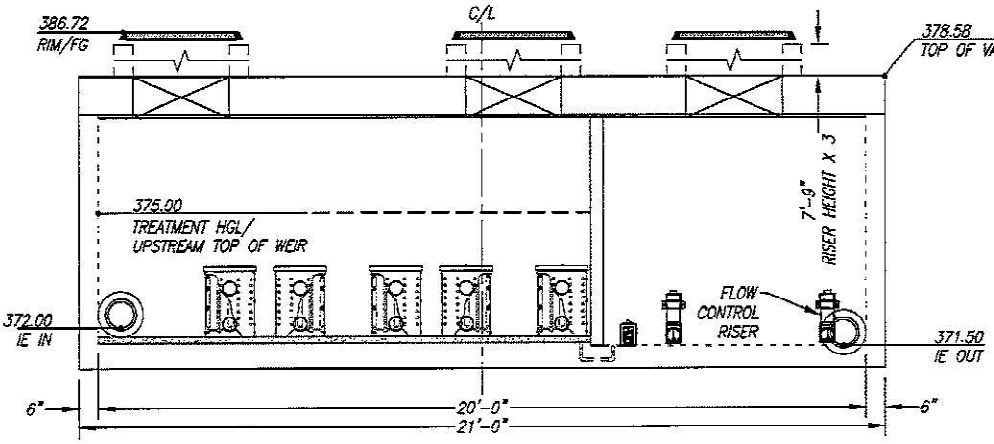
MERGE 56 ONSITE UNIT 2 DMAS 15, 16, & 17
CITY OF SAN DIEGO, CALIFORNIA



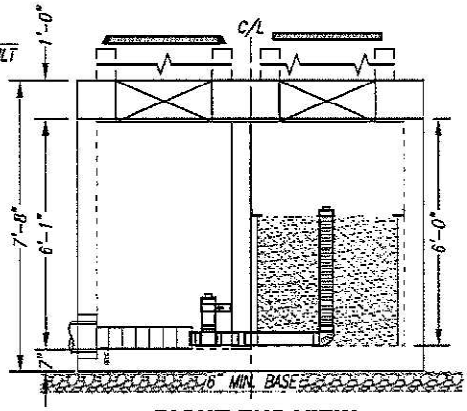
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

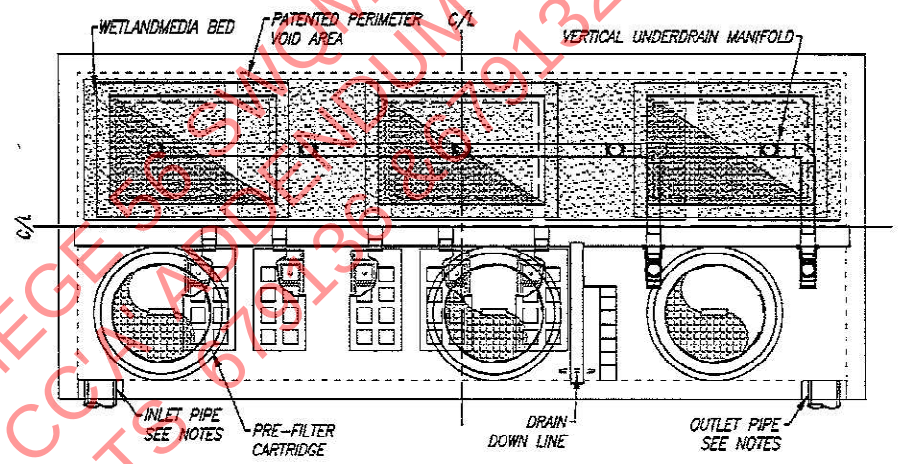
SITE SPECIFIC DATA			
PROJECT NUMBER		11966	
PROJECT NAME		MERGE 56 PHASE 2	
PROJECT LOCATION		SAN DIEGO, CA	
STRUCTURE ID		BF-3-15-1	
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
N/A		0.560	
TREATMENT HGL AVAILABLE (FT)			3.4
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			OFFLINE
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	372.00	PVC	8"
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	371.50	PVC	8"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	386.72	386.72	386.72
SURFACE LOAD	PEDESTRIAN	PEDESTRIAN	PEDESTRIAN
FRAME & COVER	2EA ø30"	3EA 30" X 48"	ø30"
WETLANDMEDIA VOLUME (CY)			8.66
ORIFICE SIZE (DIA. INCHES)			ø2.38 EA
NOTES: PRELIMINARY NOT FOR CONSTRUCTION. UNIT PENDING FINAL STRUCTURAL REVIEW – DIMENSIONS MAY VARY.			

DMA -15
BF-3-15-1
MWS-L-8-20-6'-0"-V-UG

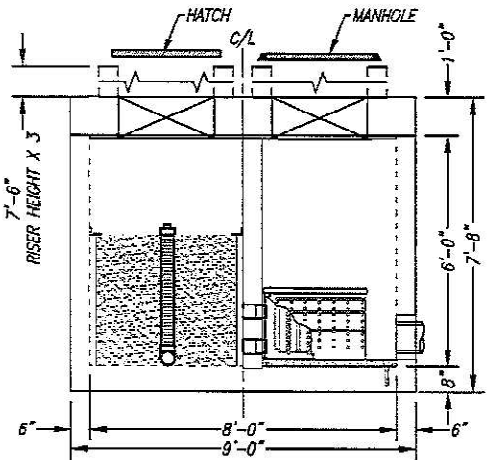
EXHIBIT B, SHEET 2 OF 8

SWMDCMA (PRIVATE)

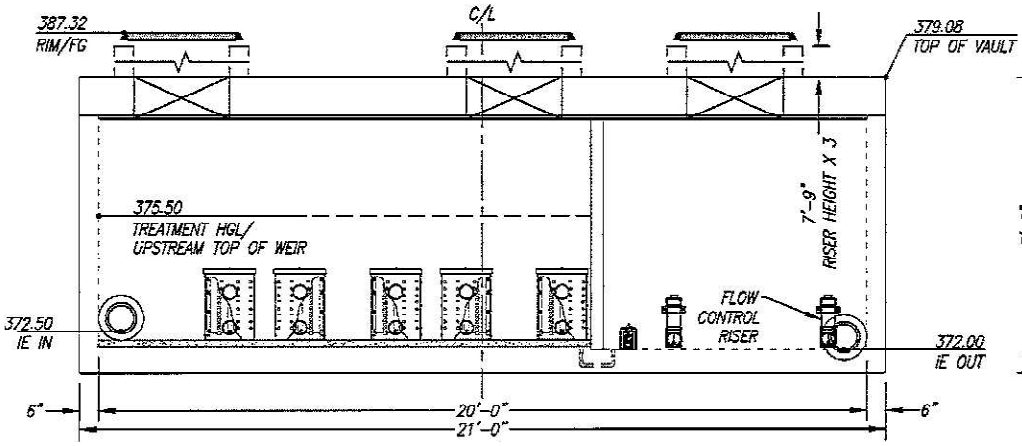
MERGE 56 ONSITE UNIT 2 DMAS 15, 16, & 17
CITY OF SAN DIEGO, CALIFORNIA



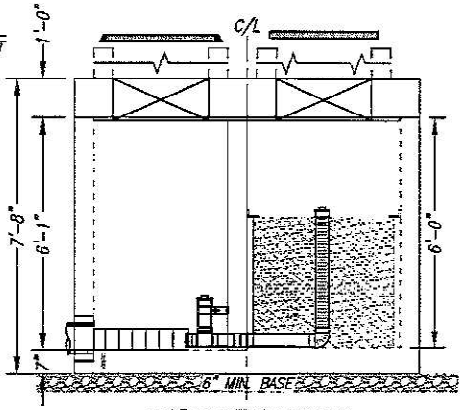
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

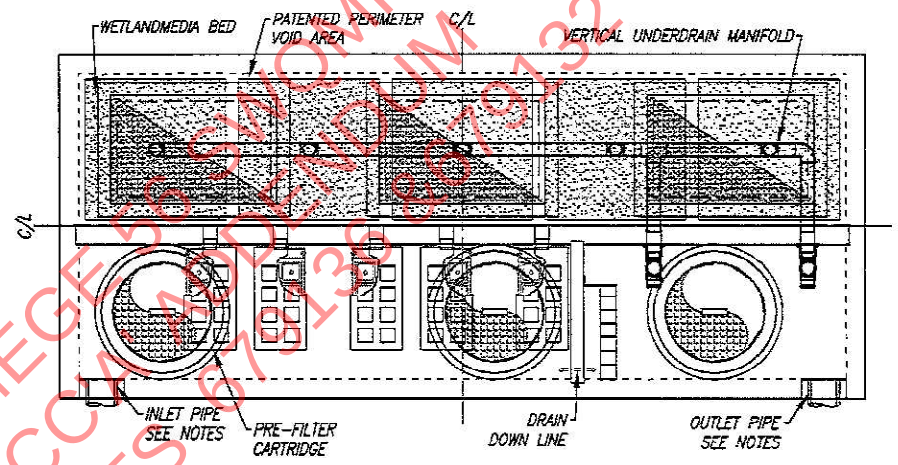
SITE SPECIFIC DATA			
PROJECT NUMBER		11986	
PROJECT NAME		MERGE 56 PHASE 2	
PROJECT LOCATION		SAN DIEGO, CA	
STRUCTURE ID		BF-3-15-2	
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
N/A		0.560	
TREATMENT HGL AVAILABLE (FT)			3.4
PEAK BYPASS REQUIRED (CFS) - IF APPLICABLE			OFFLINE
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	372.50	PVC	8"
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	372.00	PVC	8"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	387.32	387.32	387.32
SURFACE LOAD	PEDESTRIAN	PEDESTRIAN	PEDESTRIAN
FRAME & COVER	2EA Ø30"	3EA 30" X 48"	Ø30"
WETLAND MEDIA VOLUME (CY)			8.66
ORIFICE SIZE (DIA. INCHES)			Ø2.38 EA
NOTES: PRELIMINARY NOT FOR CONSTRUCTION. UNIT PENDING FINAL STRUCTURAL REVIEW -- DIMENSIONS MAY VARY.			

DMA -15
BF-3-15-2
MWS-L-8-20-6'-0"-V-UG

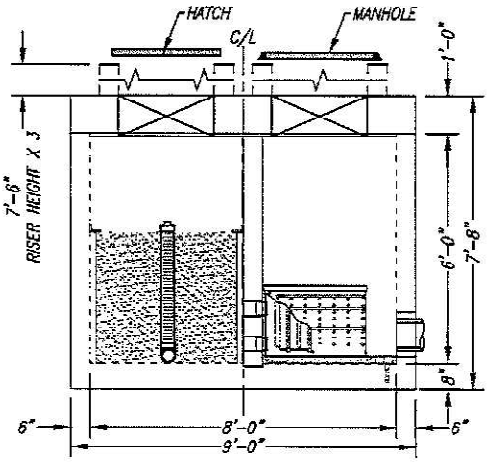
EXHIBIT B, SHEET 3 OF 8

SWMDCMA (PRIVATE)

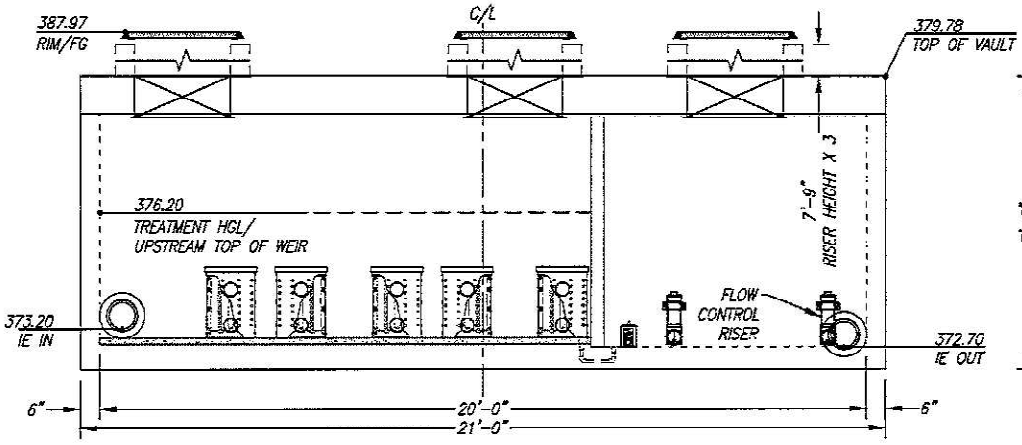
MERGE 56 ONSITE UNIT 2 DMAS 15, 16, & 17
CITY OF SAN DIEGO, CALIFORNIA



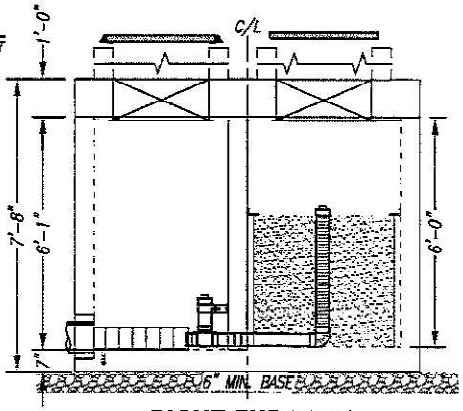
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

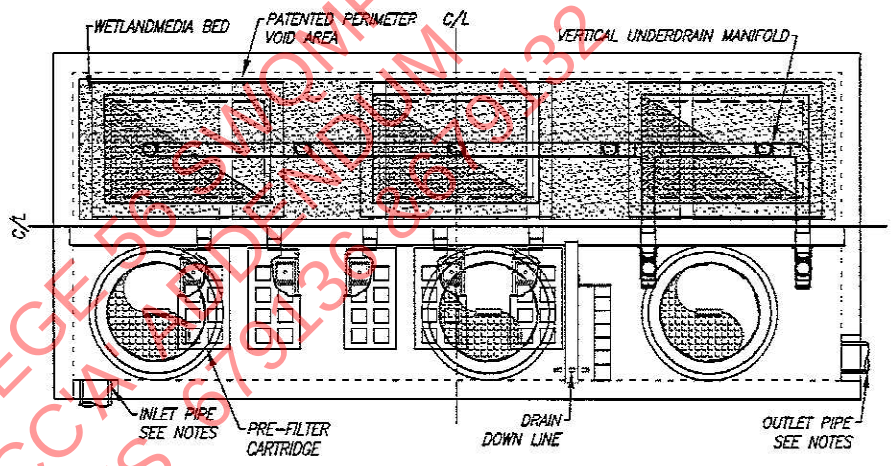
SITE SPECIFIC DATA			
PROJECT NUMBER		11986	
PROJECT NAME		MERGE 56 PHASE 2	
PROJECT LOCATION		SAN DIEGO, CA	
STRUCTURE ID		BF-3-15-3	
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
N/A		0.560	
TREATMENT HGL AVAILABLE (FT)			3.4
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			OFFLINE
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	373.20	PVC	8"
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	372.70	PVC	8"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	387.97	387.97	387.97
SURFACE LOAD	PEDESTRIAN	PEDESTRIAN	PEDESTRIAN
FRAME & COVER	2EA Ø30"	3EA 30" X 48"	Ø30"
WETLANDMEDIA VOLUME (CY)			8.66
ORIFICE SIZE (DIA. INCHES)			Ø2.38 EA
NOTES: PRELIMINARY NOT FOR CONSTRUCTION. UNIT PENDING FINAL STRUCTURAL REVIEW – DIMENSIONS MAY VARY.			

DMA -15
BF-3-15-3
MWS-L-8-20-6'-0"-V-UG

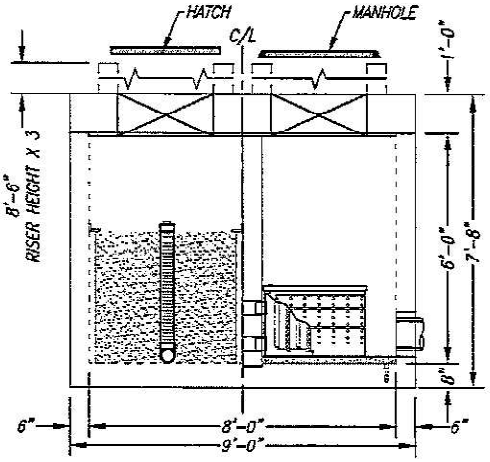
EXHIBIT B, SHEET 4 OF 8

SWMDCMA (PRIVATE)

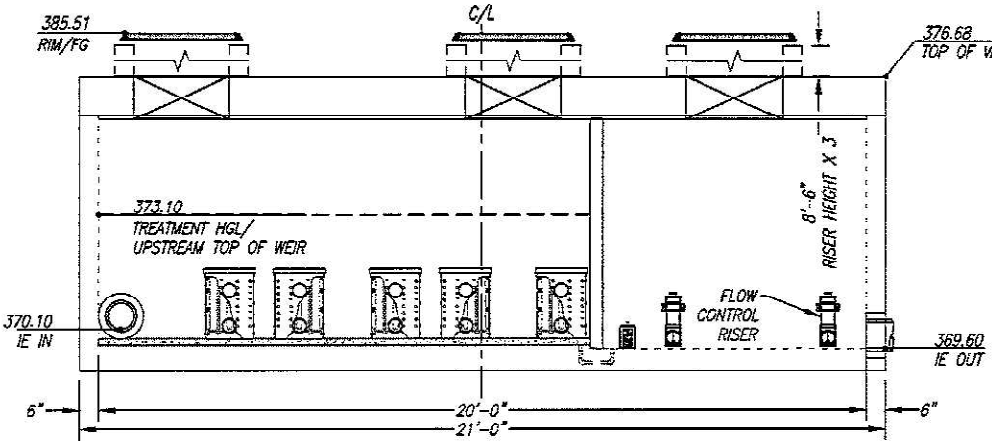
MERGE 56 ONSITE UNIT 2 DMAS 15, 16, & 17
CITY OF SAN DIEGO, CALIFORNIA



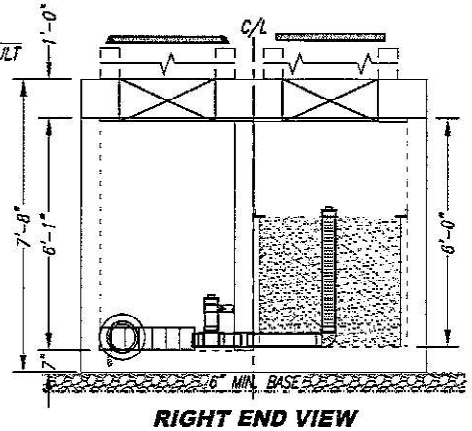
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

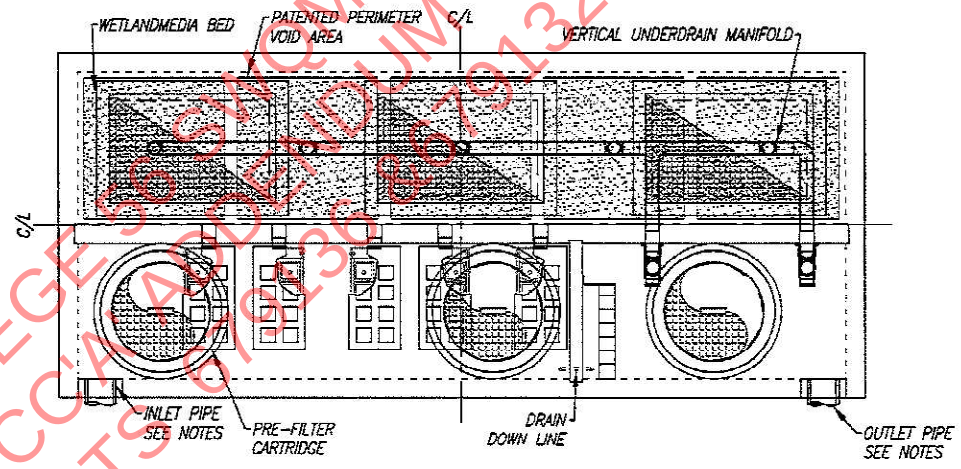
SITE SPECIFIC DATA			
PROJECT NUMBER		11986	
PROJECT NAME		MERGE 56 PHASE 2	
PROJECT LOCATION		SAN DIEGO, CA	
STRUCTURE ID		BF-3-16-1	
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
N/A		0.540	
TREATMENT HGL AVAILABLE (FT)			3.4
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			OFFLINE
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	370.10	PVC	8"
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	369.60	PVC	8"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	385.51	385.51	385.51
SURFACE LOAD	PEDESTRIAN	PEDESTRIAN	PEDESTRIAN
FRAME & COVER	2EA ø30"	3EA 30" X 48"	ø30"
WETLANDMEDIA VOLUME (CY)			8.66
ORIFICE SIZE (DIA. INCHES)			ø2.34 EA
NOTES: PRELIMINARY NOT FOR CONSTRUCTION. UNIT PENDING FINAL STRUCTURAL REVIEW – DIMENSIONS MAY VARY.			

DMA -16
BF-3-16-1
MWS-L-8-20-6'-0"-V-UG

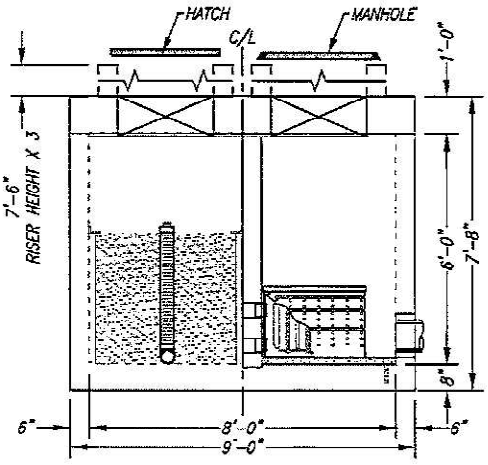
EXHIBIT B, SHEET 5 OF 8

SWMDCMA (PRIVATE)

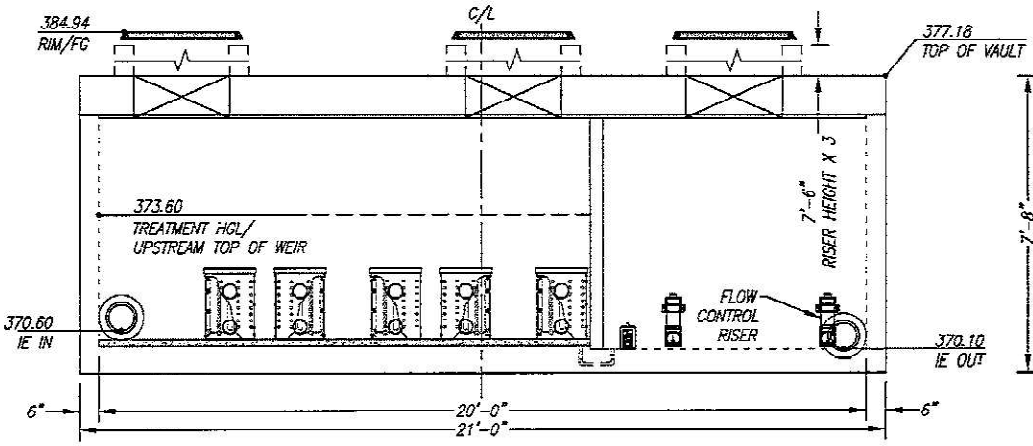
MERGE 56 ONSITE UNIT 2 DMAS 15, 16, & 17
CITY OF SAN DIEGO, CALIFORNIA



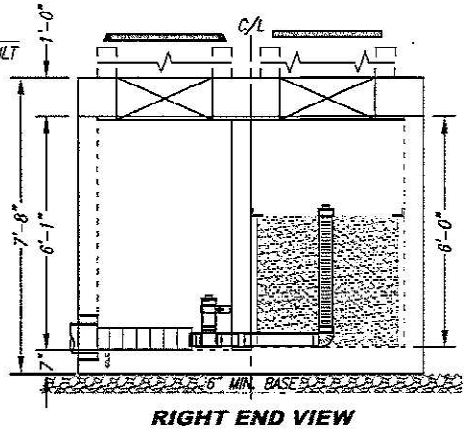
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

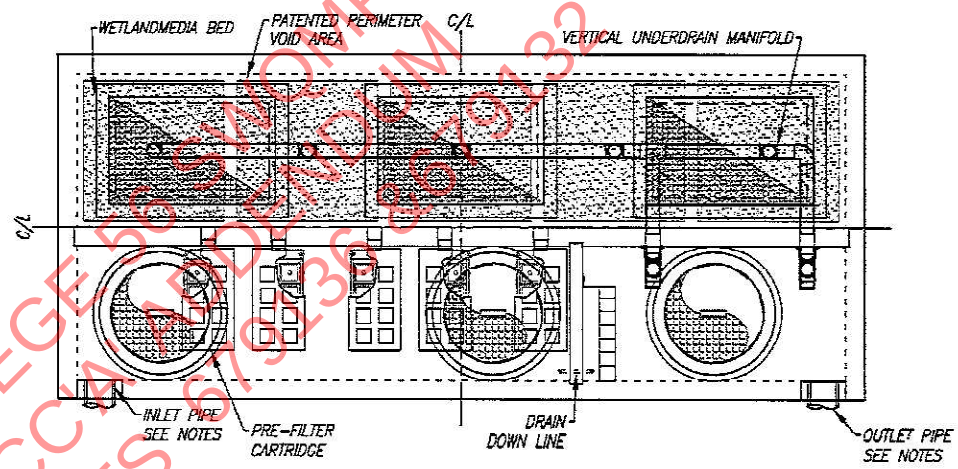
SITE SPECIFIC DATA			
PROJECT NUMBER		11986	
PROJECT NAME		MERGE 56 PHASE 2	
PROJECT LOCATION		SAN DIEGO, CA	
STRUCTURE ID		BF-3-16-2	
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
N/A		0.540	
TREATMENT HGL AVAILABLE (FT)			3.4
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			OFFLINE
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	370.60	PVC	8"
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	370.10	PVC	8"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	384.94	384.94	384.94
SURFACE LOAD	PEDESTRIAN	PEDESTRIAN	PEDESTRIAN
FRAME & COVER	2EA ø30"	3EA 30" X 48"	ø30"
WETLANDMEDIA VOLUME (CV)			8.66
ORIFICE SIZE (DIA. INCHES)			ø2.34 EA
NOTES: PRELIMINARY NOT FOR CONSTRUCTION. UNIT PENDING FINAL STRUCTURAL REVIEW – DIMENSIONS MAY VARY.			

DMA -16
BF-3-16-2
MWS-L-8-20-6'-0"-V-UG

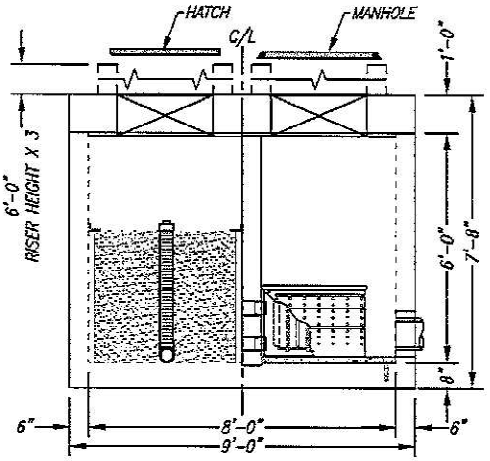
EXHIBIT B, SHEET 6 OF 8

SWMDCMA (PRIVATE)

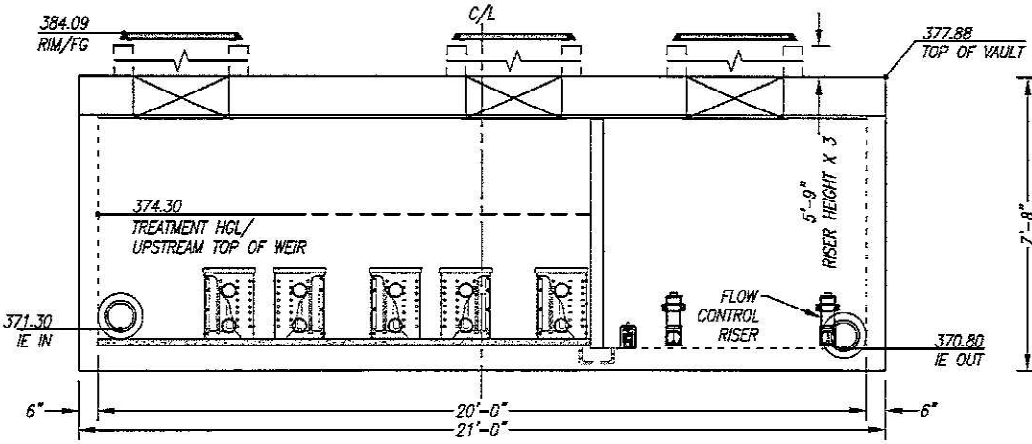
MERGE 56 ONSITE UNIT 2 DMAS 15, 16, & 17
CITY OF SAN DIEGO, CALIFORNIA



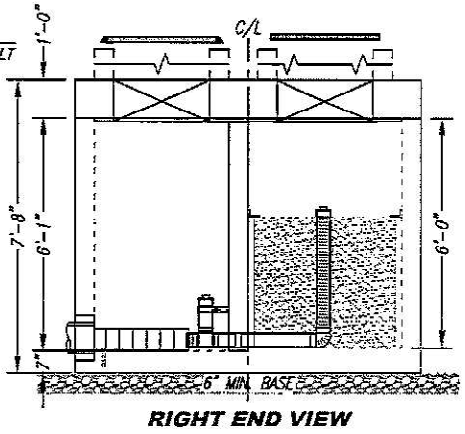
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

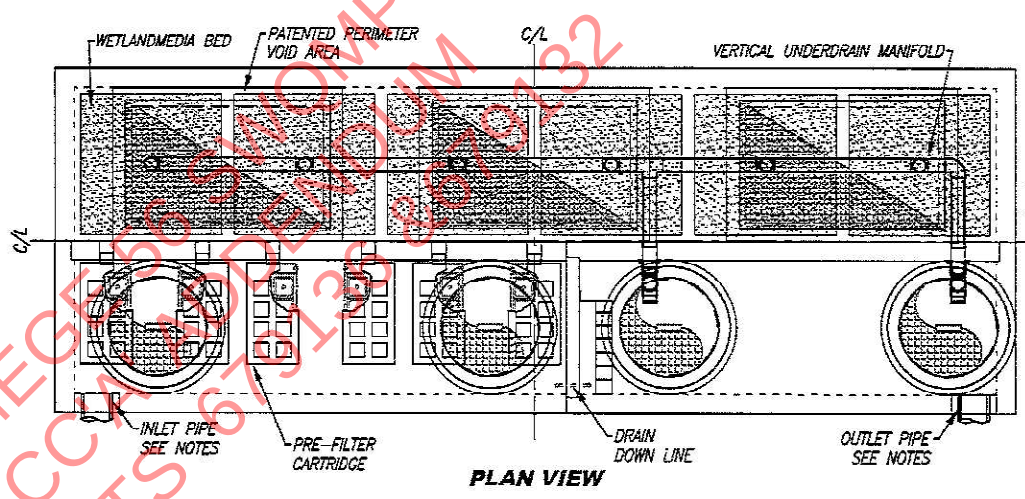
SITE SPECIFIC DATA			
PROJECT NUMBER		11986	
PROJECT NAME		MERGE 56 PHASE 2	
PROJECT LOCATION		SAN DIEGO, CA	
STRUCTURE ID		BF-3-16-3	
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
N/A		0.540	
TREATMENT HGL AVAILABLE (FT)			3.4
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			OFFLINE
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	371.30	PVC	8"
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	370.80	PVC	8"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	384.09	384.09	384.09
SURFACE LOAD	PEDESTRIAN	PEDESTRIAN	PEDESTRIAN
FRAME & COVER	2EA ø30"	3EA 30" X 48"	ø30"
WETLANDMEDIA VOLUME (CY)			8.66
ORIFICE SIZE (DIA. INCHES)			ø2.34 EA
NOTES: PRELIMINARY NOT FOR CONSTRUCTION. UNIT PENDING FINAL STRUCTURAL REVIEW – DIMENSIONS MAY VARY.			

DMA -16
BF-3-16-3
MWS-L-8-20-6'-0"-V-UG

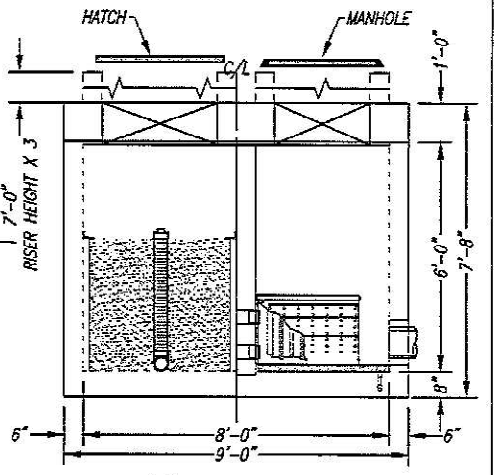
EXHIBIT B, SHEET 7 OF 8

SWMDCMA (PRIVATE)

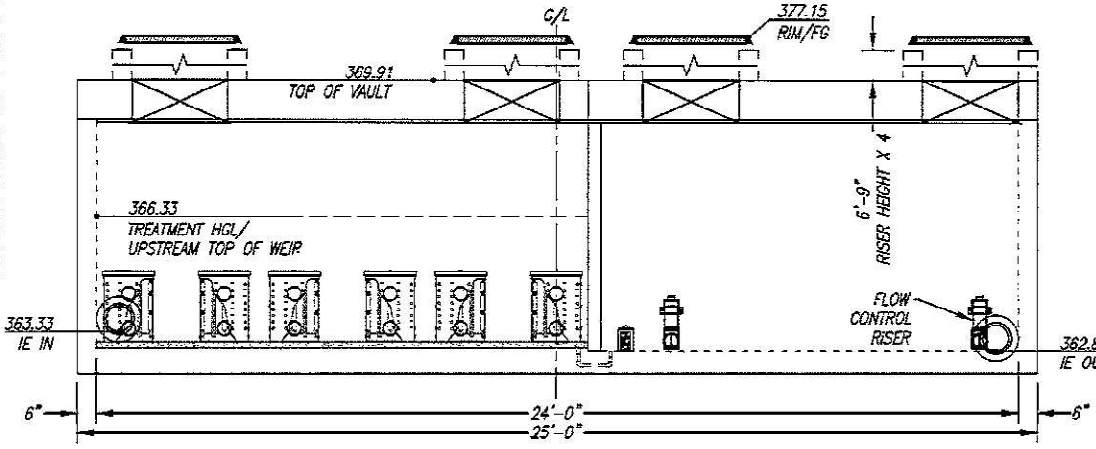
MERGE 56 ONSITE UNIT 2 DMAS 15, 16, & 17
CITY OF SAN DIEGO, CALIFORNIA



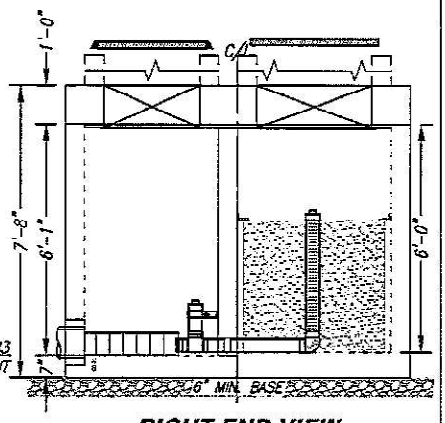
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

SITE SPECIFIC DATA			
PROJECT NUMBER		11986	
PROJECT NAME		MERGE 56 PHASE 2	
PROJECT LOCATION		SAN DIEGO, CA	
STRUCTURE ID		BF-3-17-1	
TREATMENT REQUIRED			
VOLUME BASED (CF)		FLOW BASED (CFS)	
N/A		0.690	
TREATMENT HGL AVAILABLE (FT)			3.4
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			OFFLINE
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	363.33	PVC	8"
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	362.83	PVC	8"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	377.15	377.15	377.15
SURFACE LOAD	PEDESTRIAN	PEDESTRIAN	PEDESTRIAN
FRAME & COVER	2EA ø30"	3EA 30" X 48"	2EA ø30"
WETLANDMEDIA VOLUME (CY)			10.52
ORIFICE SIZE (DIA. INCHES)			ø2.66 EA
NOTES: PRELIMINARY NOT FOR CONSTRUCTION.			

DMA -17
BF-3-17-1
MWS-L-8-24-6'-0"-V-UG

EXHIBIT B, SHEET 8 OF 8

SWMDCMA (PRIVATE)

MERGE 56 ONSITE UNIT 2 DMAS 15, 16, & 17
CITY OF SAN DIEGO, CALIFORNIA

POST-CONSTRUCTION PERMANENT BMP EXHIBIT 'C'
MERGE 56 ONSITE UNIT 2 DMAS 15, 16, & 17 - SWMDCMA

POST-CONSTRUCTION PERMANENT BMP OPERATION + MAINTENANCE PROCEDURE DETAILS

STORM WATER MANAGEMENT AND DISCHARGE CONTROL MAINTENANCE AGREEMENT APPROVAL NO.: 2505415

O&M RESPONSIBLE PARTY DESIGNEE: PROPERTY OWNER (LENNAR HOMES OF CALIFORNIA, INC.)

BMP DESCRIPTION	MAINTENANCE TASK	MAINTENANCE FREQUENCY	MAINTENANCE METHOD	QUANTITY	SHEET NUMBER(S)
POLLUTANT CONTROL					
MODULAR WETLANDS SYSTEM	TRASH & SEDIMENT REMOVAL	EVERY 6-24 MONTHS	TASKS INCLUDE TRASH REMOVAL FROM SCREENING DEVICE AND SEDIMENT REMOVAL FROM SEPARATION CHAMBER.	7	34, 42-45
	REPLACE FILTER MEDIA	EVERY 12-24 MONTHS	REPLACE CARTRIDGE FILTER MEDIA AND DRAIN DOWN FILTER MEDIA.		
SITE DESIGN ELEMENTS					
SD-1 THROUGH 5 & 7	VARIES- SEE CITY OF SAN DIEGO HANDBOOK	AS NEEDED AFTER RAIN EVENT	VARIES- SEE CITY OF SAN DIEGO HANDBOOK	-	42
SOURCE CONTROL					
SC-1 THROUGH 6	VARIES- SEE CITY OF SAN DIEGO HANDBOOK	AS NEEDED	VARIES- SEE CITY OF SAN DIEGO HANDBOOK	-	42

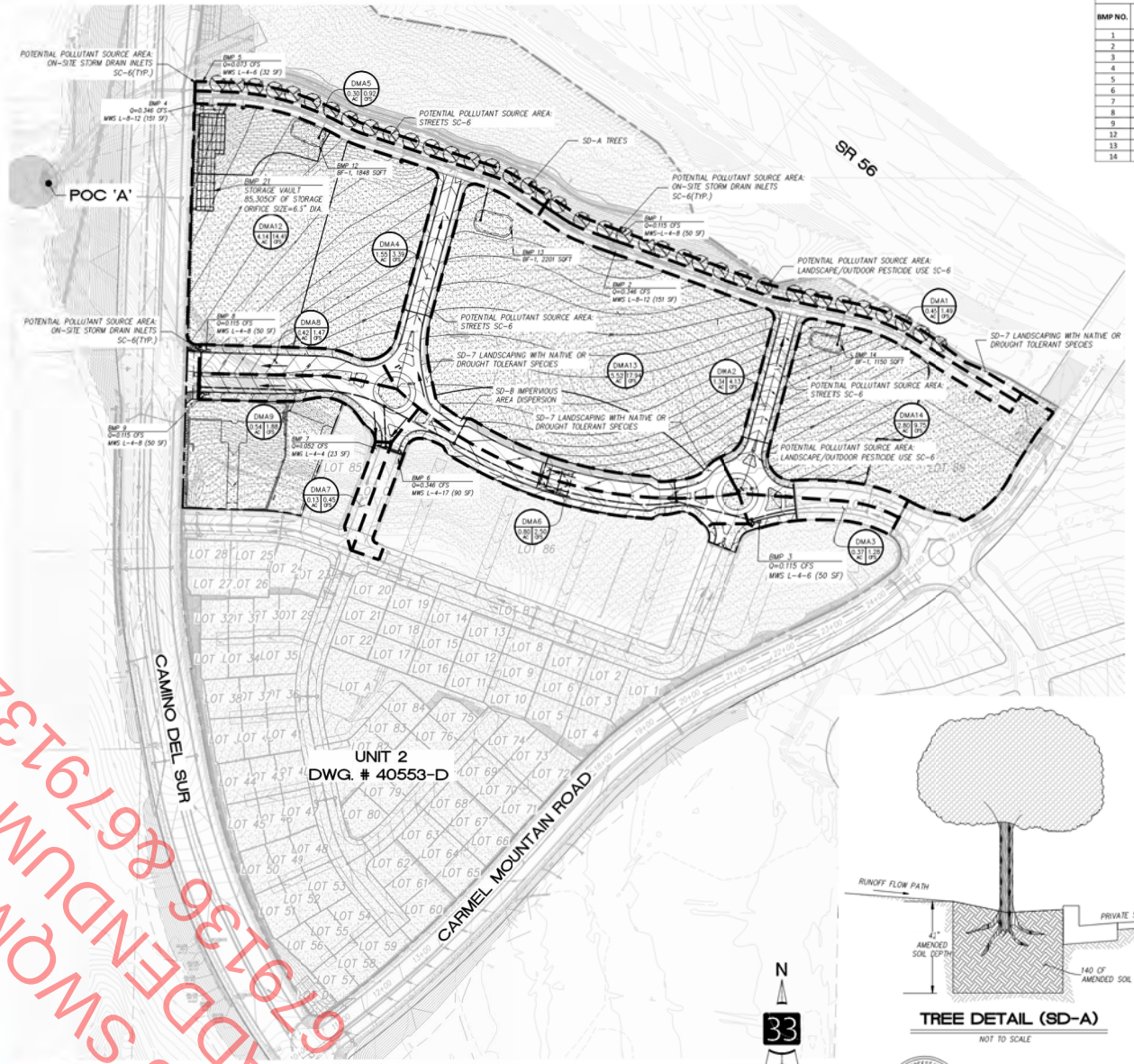
EXHIBIT C

SWMDCMA (PRIVATE)

MERGE 56 ONSITE UNIT 2 DMAS 15, 16 & 17
CITY OF SAN DIEGO, CALIFORNIA

Attachment 4
Copy of Plan Sheets Showing Permanent Storm Water BMPs

This is the cover sheet for Attachment 4.



BMP AREA TABLE				
BMP NO.	TREATMENT REQ'D (CFS)	TREATMENT PROVIDED (CFS)	TYPE	SWMDCMA APPROVAL #
1	0.081	0.115	MWS-L-4-8	2520475
2	0.287	0.346	MWS-L-8-12	2520475
3	0.072	0.073	MWS-L-4-6	2520475
4	0.338	0.346	MWS-L-8-12	2520475
5	0.059	0.073	MWS-L-4-6	2520475
6	0.173	0.175	MWS-L-4-17	2520475
7	0.039	0.052	MWS-L-4-4	2520475
8	0.087	0.115	MWS-L-4-8	2520475
9	0.112	0.115	MWS-L-4-8	2520475
12	1622 SQFT	1849 SQFT	BIOFILTRATION BASIN	2505421
13	2153 SQFT	2201 SQFT	BIOFILTRATION BASIN	2505421
14	1097 SQFT	1150 SQFT	BIOFILTRATION BASIN	2505421

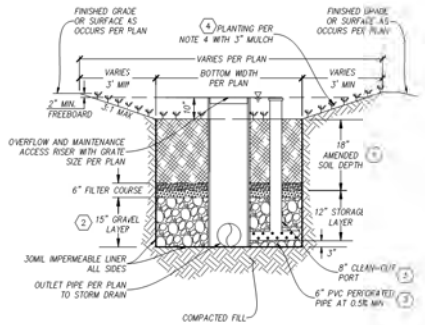
LEGEND

- SHEET FLOW PATH
- DMA (DRAINAGE MANAGEMENT AREA) BOUNDARY
- DMA AREA — DMA NUMBER AND AREA IN ACRES
- PERVIOUS AREA
- IMPERVIOUS AREA
- PROPOSED STORM DRAIN

MHPA/VP/COE NOTE:
TEMPORARY AND PERMANENT PROTECTION SHALL BE PROVIDED AT LIMITS OF PROJECT IMPACTS AND AT ALL INTERFACES WITH MHPA, COE, AND OFFSITE VERNAL POOL AREAS. SEE MERGE 56 OFFSITE GRADING PLANS, DWG 40589-D, FOR DELINEATION OF TEMPORARY SILT AND CONSTRUCTION FENCING (EROSION CONTROL PLAN) AND PERMANENT PROTECTIVE FENCING (GRADING PLANS).

POST-CONSTRUCTION BMP NOTES

1. FOR BMP DETAILS AND SPECIFICATIONS SEE SHEETS 19-23.
2. SIGNAGE INDICATING THE LOCATION AND BOUNDARY OF ALL STRUCTURAL BMPs SHALL BE INSTALLED SUFFICIENT TO THE CITY ENGINEER.
3. FOR ACCESS AND MAINTENANCE PORTS & CLEAN-OUTS, SEE DETAILS ON SHEETS 18-23.
4. NO MATERIALS TO BE EXPOSED TO STORMWATER RUNOFF.
5. NO BUILDING OR POLLUTANT GENERATING ACTIVITY AREAS ARE PROPOSED (FUELING, GARAGES, WASTE CONTAINERS, WASH RACKS, HAZARDOUS MATERIALS)
6. NO ONSITE AREAS OF POTENTIAL EROSION
7. NO EXISTING DRINKING WATER WELLS
8. FOR MAINTENANCE THRESHOLDS SPECIFIC TO STRUCTURAL BMPS AND RECOMMENDED MAINTENANCE PROCEDURES, SEE BMP TABLE ON SHEET 1



BIOFILTRATION BASIN DETAIL (PVT) (BF-1)

NOT TO SCALE

BIOFILTRATION BASIN NOTES

1. AMENDED SOIL SHALL CONFORM TO THE STANDARD SPECIFICATION PER APPENDIX F.4 OF THE CITY OF SAN DIEGO STORM WATER STANDARDS MANUAL AND SHALL MAINTAIN A MINIMUM INFILTRATION RATE OF 5 IN/HR OVER THE LIFETIME OF THE FACILITY.
2. GRAVEL STORAGE LAYER SHALL CONFORM TO THE STANDARD SPECIFICATION PER APPENDIX F.5 OF THE CITY OF SAN DIEGO STORM WATER STANDARDS MANUAL AND SHALL CONSIST OF A MINIMUM 6" FILTER COURSE OVER MINIMUM 12" OF CLEAN WASHED ASTM #57 OPEN GRADED STONE (VARIES PER HYDROMOD CALCS). FILTER COURSE SHALL CONSIST OF 3" LAYER OF CLEAN WASHED ASTM 33 FINE AGGREGATE SAND OVERLYING A 3" LAYER OF ASTM NO. 8 STONE.
3. UNDERDRAINS SHALL BE MINIMUM 6" SLOTTED PVC PIPE CONFORMING TO ASTM D3034 OR CORRUGATED HDPE CONFORMING TO AASHTO M252M. CLEANOUT PORTS SHALL BE A MINIMUM 8" DIAMETER WITH LOCKABLE CAP AND PLACED EVERY 50' OF UNDERDRAIN LENGTH.
4. BIOFILTRATION BASINS SHALL BE PLANTED WITH ADEQUATE GROUNDCOVER AS OUTLINED IN APPENDIX E OF THE SAN DIEGO LOW IMPACT DEVELOPMENT DESIGN MANUAL. SEE LANDSCAPE PLANS SHEETS FOR PLANTING PLAN.
5. BF-1 BIOFILTRATION BASINS WHICH DO NOT INCORPORATE ANY INFILTRATION SHALL BE FULLY LINED WITH A 30MIL IMPERMEABLE LINER ON BOTH SIDES AND THE BOTTOM OF THE BASIN EXCAVATION.

TREE DETAIL (SD-A)

NOT TO SCALE

N

33

0 50 100 200 300

(IN FEET)
1 inch = 100 ft.

DIG ALERT 811

IMPORTANT NOTICE: Section 4216 of the Government Code requires that a Dig Alert Identification Number be issued before a "Permit to Excavate" will be valid. For your Dig Alert I.D. Number Call Underground Service Alert TOLL FREE 1-800-422-4133 Two working days before you dig

CAUTION!!!
CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS AND POINTS OF CONNECTION FOR POTENTIAL CONFLICT PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF WORK SUFFICIENTLY IN ADVANCE TO PERMIT POTENTIAL MODIFICATION PLANS.

MATTHEW J. SEMIC
R.C.E. 71075
DATE:

DESIGNED BY:	PM REVIEW:	SURVEY REVIEW:
HRG-DD	JRG	TJD

latitude 33
PLANNING & ENGINEERING
9668 Hibert Street 2nd Floor, San Diego, CA 92131
Tel 858.791.0893

PRIVATE CONTRACT

POST-CONSTRUCTION BMP PLAN FOR:

MERGE 56 - UNIT 1

LOTS 1-7 AND "A"-"F" OF MAP 16433

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 34 OF 40 SHEETS

PROJECT NO. 598359

V.T.M. 1286700

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	LAT33			
AS-BUILTS				

FOR CITY ENGINEER _____ DATE _____
CONTRACTOR _____ DATE STARTED _____
INSPECTOR _____ DATE COMPLETED _____

1976-4018.3 NADB3 COORDINATES

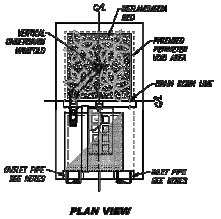
1186-1771 LAMBERT COORDINATES

40552- 34 -D

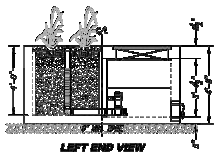
NEW SHEET

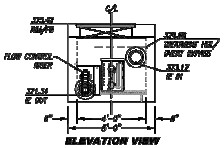
SITE SPECIFIC DATA			
PROJECT NUMBER	7699		
PROJECT NAME	MERGE 56 ONSITE DESIGN		
PROJECT LOCATION	SAN DIEGO, CA		
STRUCTURE ID	BMP 1		
TREATMENT REQUIRED			
VOLUME BASED (CF)	FLOW BASED (CFS)		
N/A	0.287		
TREATMENT HGL AVAILABLE (FT)			N/A
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			ONSITE
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	375.17	PVC	8"
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	371.34	PVC	8"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	379.48	379.48	379.48
SURFACE LOAD	PEDESTRIAN	N/A	PEDESTRIAN
FRAME & COVER	24" X 36"	OPEN PLANTER	N/A
RETAINED VOLUME (CY)			3.01
ORIFICE SIZE (DIA. INCHES)			01.65"

NOTES: PRELIMINARY ONLY FOR CONFIRMATION. 7' INVERT TO BE PLACED IN UPSTREAM CATCH BASIN WITH I.E. OUT AT 372.48.

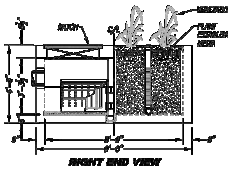


PLAN VIEW


LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. PIPES CANNOT PROTRUDE BEYOND FLUSH. INVERT OF OUTLET PIPE MUST BE FLUSH WITH ENGINEERED CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATERTIGHT PER MANUFACTURER'S STANDARD CONNECTION DETAIL.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL PIPES, HOSES, MANIFOLDS, AND HARDWARE. CONTRACTOR TO GROUT ALL MANIFOLDS AND HARDWARE TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. VEGETATION SUPPLIED AND INSTALLED BY OTHERS. ALL UNITS WITH VEGETATION MUST HAVE DRIP OR SPRAY IRRIGATION SUPPLIED AND INSTALLED BY OTHERS.
7. CONTRACTOR RESPONSIBLE FOR CONVEYING BIO CLEAN FOR ACTIVATION OF UNIT. MANUFACTURER'S WARranty IS VOID WITHOUT PROPER ACTIVATION BY A BIO CLEAN REPRESENTATIVE.

GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT BIO CLEAN.

TREATMENT FLOW (CFS)	0.287
OPERATING HEAD (FT)	3.66
PRETREATMENT LOADING RATE (GPM/SF)	1.6
REMAND MEDIA LOADING RATE (GPM/SF)	1.0

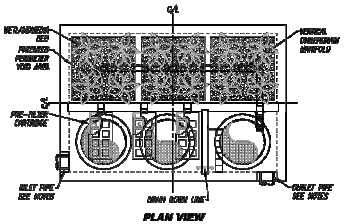
PROPRIETARY AND CONFIDENTIAL:
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF BIO CLEAN ENVIRONMENTAL SERVICES, INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF BIO CLEAN ENVIRONMENTAL SERVICES, INC. IS PROHIBITED. USE OF THIS DRAWING BY ANY PARTY FOR ANY PURPOSE OTHER THAN THE INTENDED PURCHASE OF BIO CLEAN EQUIPMENT IS EXPRESSLY PROHIBITED.

Bio Clean — A Nelson Company

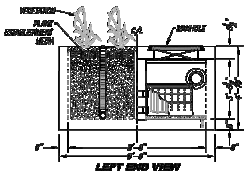
MWS-L-4-8-4'-0"-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

SITE SPECIFIC DATA			
PROJECT NUMBER	7699		
PROJECT NAME	MERGE 56 ONSITE DESIGN		
PROJECT LOCATION	SAN DIEGO, CA		
STRUCTURE ID	BMP 2		
TREATMENT REQUIRED			
VOLUME BASED (CF)	FLOW BASED (CFS)		
N/A	0.287		
TREATMENT HGL AVAILABLE (FT)			N/A
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			ONSITE
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	372.27	PVC	6"
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	371.21	PVC	8"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	378.48	378.48	378.48
SURFACE LOAD	PEDESTRIAN	N/A	PEDESTRIAN
FRAME & COVER	24" X 36"	OPEN PLANTER	6.70"
RETAINED VOLUME (CY)			8.39
ORIFICE SIZE (DIA. INCHES)			02.55"

NOTES: PRELIMINARY ONLY FOR CONFIRMATION. 14' INVERT TO BE PLACED IN UPSTREAM CATCH BASIN WITH I.E. OUT AT 372.06.



PLAN VIEW



LEFT END VIEW

INSTALLATION NOTES

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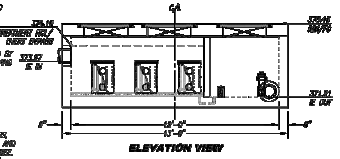
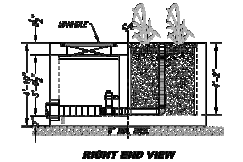


ELEVATION VIEW



RIGHT END VIEW

GENERAL NOTES

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TREATMENT FLOW (CFS)	0.287
OPERATING HEAD (FT)	3.5
PRETREATMENT LOADING RATE (GPM/SF)	1.7
REMAND MEDIA LOADING RATE (GPM/SF)	1.0

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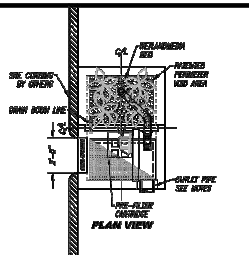
Bio Clean — A Nelson Company

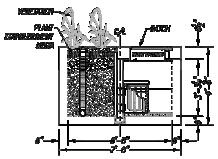
MWS-L-8-12-4'-2"-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

SITE SPECIFIC DATA			
PROJECT NUMBER	7699		
PROJECT NAME	MERGE 56 ONSITE DESIGN		
PROJECT LOCATION	SAN DIEGO, CA		
STRUCTURE ID	BMP 3		
TREATMENT REQUIRED			
VOLUME BASED (CF)	FLOW BASED (CFS)		
N/A	0.1256		
TREATMENT HGL AVAILABLE (FT)			N/A
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			FLOW BY
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	N/A	N/A	N/A
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	367.88	HDPE	6"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	381.98	381.98	381.98
SURFACE LOAD	PEDESTRIAN	N/A	PEDESTRIAN
FRAME & COVER	24" X 42"	OPEN PLANTER	N/A
RETAINED VOLUME (CY)			0.82
ORIFICE SIZE (DIA. INCHES)			01.22"

NOTES: PRELIMINARY ONLY FOR CONFIRMATION. SUBJECT TO VERIFY OUTLET PIPE I.E. AND SIZE AND PEAK FLOW BYPASS NEEDED.



PLAN VIEW



LEFT END VIEW

INSTALLATION NOTES

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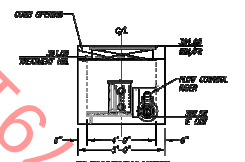
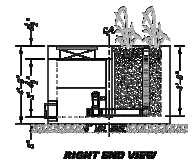


ELEVATION VIEW



RIGHT END VIEW

GENERAL NOTES

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TREATMENT FLOW (CFS)	0.1573
OPERATING HEAD (FT)	3.6
PRETREATMENT LOADING RATE (GPM/SF)	2.8
REMAND MEDIA LOADING RATE (GPM/SF)	1.0

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Bio Clean — A Nelson Company

MWS-L-4-6-4'-0"-C
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

DIGALERT 811

IMPORTANT NOTICE
Section 4216 of the Government Code requires that a Dig Alert Identification Number be issued before a "Permit to Excavate" will be valid. For your Dig Alert I.D. Number Call Underground Service Alert
TOLL FREE 1-800-422-4133
Two working days before you dig.

CAUTION!!!
CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS AND POINTS OF CONNECTION FOR POTENTIAL CONFLICT PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF WORK SUFFICIENTLY IN ADVANCE TO PERMIT POTENTIAL MODIFICATION PLANS.

NOTE:
THIS SHEET IS PROVIDED FOR INFORMATION ONLY. THE CITY ENGINEER'S SIGNATURE ON THESE PLANS DOES NOT CONSTITUTE APPROVAL OF ANY OF THESE NOTES AND THE CITY WILL NOT BE RESPONSIBLE FOR THEIR ENFORCEMENT.

PRIVATE CONTRACT

BIO CLEAN ENGINEER'S STATEMENT

THE MANUFACTURER'S DETAILS AND CUT SHEETS INCLUDED HEREON HAVE BEEN DESIGNED BY BIO CLEAN ENVIRONMENTAL SERVICES, INC. BASED UPON DESIGN INFORMATION PROVIDED BY LATITUDE 33 PLANNING AND ENGINEERING. BIO CLEAN ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE REQUIRED 'WATER QUALITY FLOW RATES' PROVIDED HEREON. THE ENGINEER'S STAMP ON THIS DRAWING IS MEANT TO ASSURE THAT THE DEVICES SHOWN ARE MECHANICALLY COMPETENT AND WILL PERFORM TO THE EXTENT DETAILED HEREON PROVIDED THAT THE PROPER OPERATIONS AND MAINTENANCE PROCEDURES ARE FOLLOWED TO PRESERVE THE DEVICE'S FUNCTIONALITY. IT IS THE RESPONSIBILITY OF THE OWNER TO PROVIDE ONGOING MAINTENANCE INTO PERPETUITY AS OUTLINED IN THE 'STORM WATER MANAGEMENT AND DISCHARGE CONTROL MAINTENANCE AGREEMENT APPROVAL #2255199'. REVISIONS TO THE DETAILS MAY BE REQUIRED IF SOIL CONDITIONS ON SITE ARE FOUND TO BE DIFFERENT FROM WHAT IS REPORTED IN THE GEOTECHNICAL INVESTIGATION.

COREY LEE HAEDER
R.C.E. 88728

DATE REGISTRATION EXPIRES: 03/31/2022

BIOCLEAN DETAILS FOR:

MERGE 56 - UNIT 1

LOTS 1-7 AND "A"-"F" OF MAP 16433

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 35 OF 40 SHEETS

PROJECT NO. 596359
V.T.M. 1266780

FOR CITY ENGINEER _____ DATE _____

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	LAT33			
AS-BUILTS				

1926-6283
NAD83 COORDINATES

286-1723
LAMBERT COORDINATES

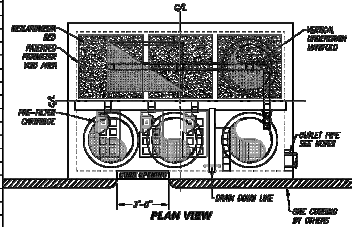
CONTRACTOR _____ DATE STARTED _____
INSPECTOR _____ DATE COMPLETED _____

40552- 35 -D

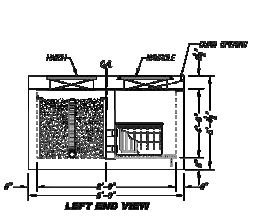
NEW SHEET

SITE SPECIFIC DATA			
PROJECT NUMBER	7559		
PROJECT NAME	MERGE 56 ONSITE DESIGN		
PROJECT LOCATION	SAN DIEGO, CA		
STRUCTURE ID	BMP 4		
TREATMENT REQUIRED			
VOLUME BASED (CF)	FLOW BASED (CFS)		
N/A	0.338		
TREATMENT HGL AVAILABLE (FT)			N/A
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			FLOW BY
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	N/A	N/A	N/A
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	363.83	HDPE	8"
	PRETREATMENT	EXCFILTRATION	DISCHARGE
RIM ELEVATION	368.66	368.66	368.66
SURFACE LOAD	PEDESTRIAN	PEDESTRIAN	PEDESTRIAN
FRAME & COVER	24" X 36"	30"x48" & 4.25"	4.25"
RETAINED VOLUME (CF)			0.26
ORIFICE SIZE (DIA. INCHES)			SEE 61.48"

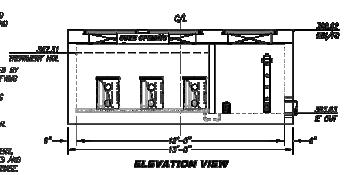
NOTE: PRELIMINARY NOT FOR CONSTRUCTION, ENGINEER TO VERIFY OUTLET PIPE I.E. AND SIZE AND PERK ORIFICE METHOD.



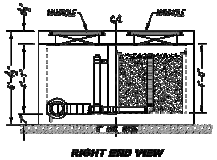
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

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5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL PIPES, INSERTS, GRANULES, AND MATERIALS. CONTRACTOR TO GROUT ALL GRANULES AND INSERTS TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
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TREATMENT FLOW (CFS)	0.349
OPERATING HEAD (FT)	2.6
PRETREATMENT LOADING RATE (GPM/SF)	2.0
REHARD MEDIA LOADING RATE (GPM/SF)	1.0

PROPRIETARY AND CONFIDENTIAL:
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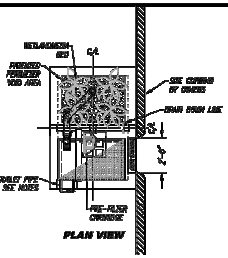
Bio Clean — A Nelson Company

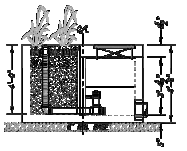
MWS-L-8-12-4'-0"-C-UG
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

SITE SPECIFIC DATA			
PROJECT NUMBER	7559		
PROJECT NAME	MERGE 56 ONSITE DESIGN		
PROJECT LOCATION	SAN DIEGO, CA		
STRUCTURE ID	BMP 5		
TREATMENT REQUIRED			
VOLUME BASED (CF)	FLOW BASED (CFS)		
N/A	0.259		
TREATMENT HGL AVAILABLE (FT)			N/A
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			FLOW BY
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	N/A	N/A	N/A
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	384.17	HDPE	8"
	PRETREATMENT	EXCFILTRATION	DISCHARGE
RIM ELEVATION	388.88	388.86	388.86
SURFACE LOAD	PEDESTRIAN	N/A	PEDESTRIAN
FRAME & COVER	24" X 42"	OPEN PLANTER	N/A
RETAINED VOLUME (CF)			1.48
ORIFICE SIZE (DIA. INCHES)			61.22"

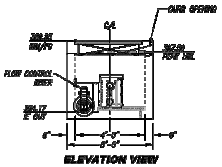
NOTE: PRELIMINARY NOT FOR CONSTRUCTION, ENGINEER TO VERIFY OUTLET PIPE I.E. AND SIZE AND PERK ORIFICE METHOD.



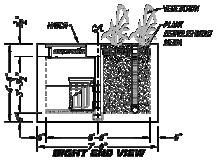
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

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GENERAL NOTES

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TREATMENT FLOW (CFS)	0.693
OPERATING HEAD (FT)	3.4
PRETREATMENT LOADING RATE (GPM/SF)	2.0
REHARD MEDIA LOADING RATE (GPM/SF)	1.0

PROPRIETARY AND CONFIDENTIAL:
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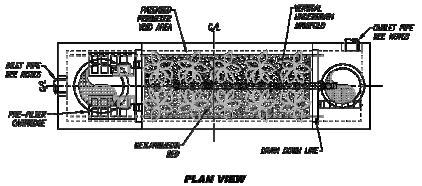
Bio Clean — A Nelson Company

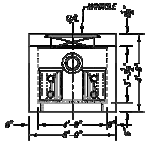
MWS-L-4-6-4'-0"-C
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

SITE SPECIFIC DATA			
PROJECT NUMBER	7559		
PROJECT NAME	MERGE 56 ONSITE DESIGN		
PROJECT LOCATION	SAN DIEGO, CA		
STRUCTURE ID	BMP 6		
TREATMENT REQUIRED			
VOLUME BASED (CF)	FLOW BASED (CFS)		
N/A	0.175		
TREATMENT HGL AVAILABLE (FT)			N/A
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			UNSP
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	380.76	HDPE	8"
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	379.85	HDPE	8"
	PRETREATMENT	EXCFILTRATION	DISCHARGE
RIM ELEVATION	388.74	388.78	388.78
SURFACE LOAD	PEDESTRIAN	N/A	PEDESTRIAN
FRAME & COVER	4367	OPEN PLANTER	4X4"
RETAINED VOLUME (CF)			5.21
ORIFICE SIZE (DIA. INCHES)			61.93"

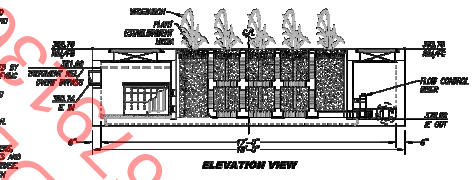
NOTES: PRELIMINARY NOT FOR CONSTRUCTION, ENGINEER TO SET 9" ORIFICE BY ORIFICHAM CHECK INSIDE 10IN I.E. OUT TO WIER AT 380.08.



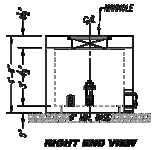
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

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TREATMENT FLOW (CFS)	0.175
OPERATING HEAD (FT)	2.6
PRETREATMENT LOADING RATE (GPM/SF)	1.5
REHARD MEDIA LOADING RATE (GPM/SF)	1.0

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Bio Clean — A Nelson Company

MWS-L-4-17-4'-0"-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

DIG ALERT 811

IMPORTANT NOTICE
Section 4216 of the Government Code requires that a Dig Alert Identification Number be issued before a "Permit to Excavate" will be valid. For your Dig Alert I.D. Number Call Underground Service Alert
TOLL FREE 1-800-422-4133
Two working days before you dig.

CAUTION!!!
CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS AND POINTS OF CONNECTION FOR POTENTIAL CONFLICT PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF WORK SUFFICIENTLY IN ADVANCE TO PERMIT POTENTIAL MODIFICATION PLANS.

NOTE:
THIS SHEET IS PROVIDED FOR INFORMATION ONLY. THE CITY ENGINEER'S SIGNATURE ON THESE PLANS DOES NOT CONSTITUTE APPROVAL OF ANY OF THESE NOTES AND THE CITY WILL NOT BE RESPONSIBLE FOR THEIR ENFORCEMENT.

BIO CLEAN ENGINEER'S STATEMENT

THE MANUFACTURER'S DETAILS AND CUT SHEETS INCLUDED HEREON HAVE BEEN DESIGNED BY BIO CLEAN ENVIRONMENTAL SERVICES, INC. BASED UPON DESIGN INFORMATION PROVIDED BY LATITUDE 33 PLANNING AND ENGINEERING. BIO CLEAN ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE REQUIRED 'WATER QUALITY FLOW RATES' PROVIDED HEREON. THE ENGINEER'S STAMP ON THIS DRAWING IS MEANT TO ASSURE THAT THE DEVICES SHOWN ARE MECHANICALLY COMPETENT AND WILL PERFORM TO THE EXTENT DETAILED HEREON PROVIDED THAT THE PROPER OPERATIONS AND MAINTENANCE PROCEDURES ARE FOLLOWED TO PRESERVE THE DEVICE'S FUNCTIONALITY. IT IS THE RESPONSIBILITY OF THE OWNER TO PROVIDE ONGOING MAINTENANCE INTO PERPETUITY AS OUTLINED IN THE 'STORM WATER MANAGEMENT AND DISCHARGE CONTROL MAINTENANCE AGREEMENT APPROVAL #2255199'. REVISIONS TO THE DETAILS MAY BE REQUIRED IF SOIL CONDITIONS ON SITE ARE FOUND TO BE DIFFERENT FROM WHAT IS REPORTED IN THE GEOTECHNICAL INVESTIGATION.

COREY LEE HAEDER
R.C.E. 88728

DATE REGISTRATION EXPIRES: 03/31/2022

PRIVATE CONTRACT

BIOCLEAN DETAILS FOR:

MERGE 56 - UNIT 1

LOTS 1-7 AND "A"-"F" OF MAP 16433

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 36 OF 40 SHEETS

PROJECT NO. 596359

V.T.M. 1266780

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	LAT33			
AS-BUILTS				

1926-6283
NAD83 COORDINATES

286-1723
LAMBERT COORDINATES

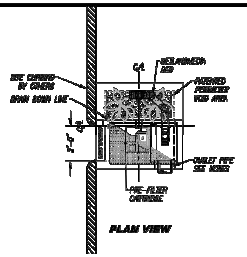
CONTRACTOR _____ DATE STARTED _____
INSPECTOR _____ DATE COMPLETED _____

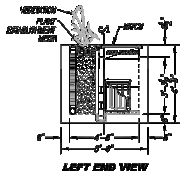
40552- 36 -D

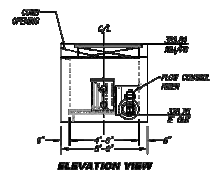
NEW SHEET

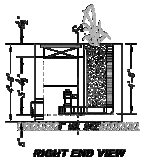
SITE SPECIFIC DATA			
PROJECT NUMBER	7556		
PROJECT NAME	MERGE 56 CHOICE DESIGN		
PROJECT LOCATION	SAN DIEGO, CA		
STRUCTURE ID	BMP 7		
TREATMENT REQUIRED			
VOLUME BASED (CF)	FLOW BASED (CFS)		
N/A	0.109		
TREATMENT VOL AVAILABLE (CF)			N/A
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			FLOW BY
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	N/A	N/A	N/A
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	399.09	HDPE	6"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	399.84	399.84	399.84
SURFACE LOAD	PEDESTRIAN	N/A	PEDESTRIAN
FRAME & COVER	24" X 48"	OPEN PLANTER	N/A
RETAINED VOLUME (CF)			0.02
ORIFICE SIZE (DIA. INCHES)			91.25"

NOTES: PRELIMINARY NOT FOR CONSTRUCTION. ENGINEER TO VERIFY OUTLET PIPE I.E. AND SIZE AND PEAK BYPASS METHOD.









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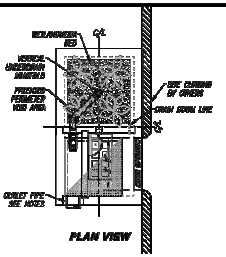
TREATMENT FLOW (CFS)	0.092
OPERATING HEAD (FT)	2.4
PRETREATMENT LOADING RATE (GPM/SF)	1.3
RETAINED MEDIA LOADING RATE (GPM/SF)	1.0

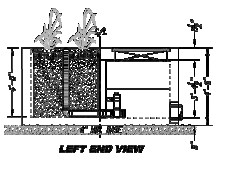
PROPRIETARY AND CONFIDENTIAL:

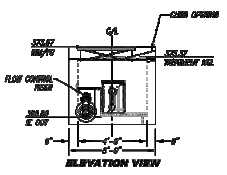
MWS-L-4-8-4'-0"-C
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

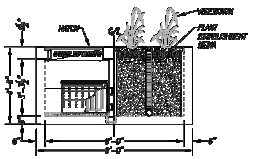
SITE SPECIFIC DATA			
PROJECT NUMBER	7556		
PROJECT NAME	MERGE 56 CHOICE DESIGN		
PROJECT LOCATION	SAN DIEGO, CA		
STRUCTURE ID	BMP 8		
TREATMENT REQUIRED			
VOLUME BASED (CF)	FLOW BASED (CFS)		
N/A	0.097		
TREATMENT VOL AVAILABLE (CF)			N/A
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			FLOW BY
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	N/A	N/A	N/A
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	399.09	HDPE	6"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	399.67	399.67	399.67
SURFACE LOAD	PEDESTRIAN	N/A	PEDESTRIAN
FRAME & COVER	30" X 30"	OPEN PLANTER	N/A
RETAINED VOLUME (CF)			2.05
ORIFICE SIZE (DIA. INCHES)			91.25"

NOTES: PRELIMINARY NOT FOR CONSTRUCTION. ENGINEER TO VERIFY OUTLET PIPE I.E. AND SIZE AND PEAK BYPASS METHOD.









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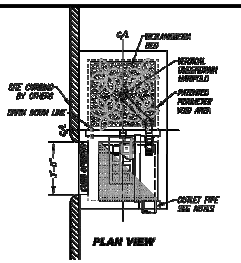
TREATMENT FLOW (CFS)	0.119
OPERATING HEAD (FT)	3.4
PRETREATMENT LOADING RATE (GPM/SF)	2.0
RETAINED MEDIA LOADING RATE (GPM/SF)	1.5

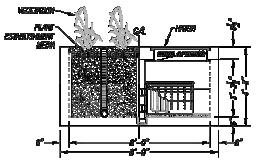
PROPRIETARY AND CONFIDENTIAL:

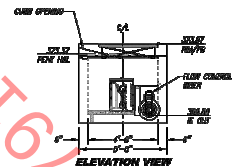
MWS-L-4-8-3'-0"-C
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

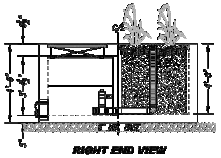
SITE SPECIFIC DATA			
PROJECT NUMBER	7556		
PROJECT NAME	MERGE 56 CHOICE DESIGN		
PROJECT LOCATION	SAN DIEGO, CA		
STRUCTURE ID	BMP 9		
TREATMENT REQUIRED			
VOLUME BASED (CF)	FLOW BASED (CFS)		
N/A	0.113		
TREATMENT VOL AVAILABLE (CF)			N/A
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE			FLOW BY
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	N/A	N/A	N/A
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	399.09	HDPE	6"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	399.67	399.67	399.67
SURFACE LOAD	PEDESTRIAN	N/A	PEDESTRIAN
FRAME & COVER	30" X 30"	OPEN PLANTER	N/A
RETAINED VOLUME (CF)			2.63
ORIFICE SIZE (DIA. INCHES)			91.53"

NOTES: PRELIMINARY NOT FOR CONSTRUCTION. ENGINEER TO VERIFY OUTLET PIPE I.E. AND SIZE AND PEAK BYPASS METHOD.









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TREATMENT FLOW (CFS)	0.113
OPERATING HEAD (FT)	3.4
PRETREATMENT LOADING RATE (GPM/SF)	2.0
RETAINED MEDIA LOADING RATE (GPM/SF)	1.9

PROPRIETARY AND CONFIDENTIAL:

MWS-L-4-8-4'-0"-C
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

BIO CLEAN ENGINEER'S STATEMENT

THE MANUFACTURER'S DETAILS AND CUT SHEETS INCLUDED HEREON HAVE BEEN DESIGNED BY BIO CLEAN ENVIRONMENTAL SERVICES, INC. BASED UPON DESIGN INFORMATION PROVIDED BY LATITUDE 33 PLANNING AND ENGINEERING. BIO CLEAN ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE REQUIRED 'WATER QUALITY FLOW RATES' PROVIDED HEREON. THE ENGINEER'S STAMP ON THIS DRAWING IS MEANT TO ASSURE THAT THE DEVICES SHOWN ARE MECHANICALLY COMPETENT AND WILL PERFORM TO THE EXTENT DETAILED HEREON PROVIDED THAT THE PROPER OPERATIONS AND MAINTENANCE PROCEDURES ARE FOLLOWED TO PRESERVE THE DEVICE'S FUNCTIONALITY. IT IS THE RESPONSIBILITY OF THE OWNER TO PROVIDE ONGOING MAINTENANCE INTO PERPETUITY AS OUTLINED IN THE 'STORM WATER MANAGEMENT AND DISCHARGE CONTROL MAINTENANCE AGREEMENT APPROVAL #2255199'. REVISIONS TO THE DETAILS MAY BE REQUIRED IF SOIL CONDITIONS ON SITE ARE FOUND TO BE DIFFERENT FROM WHAT IS REPORTED IN THE GEOTECHNICAL INVESTIGATION.

COREY LEE HAEDER
R.C.E. 88728

DATE REGISTRATION EXPIRES: 03/31/2022

DIG ALERT 811

IMPORTANT NOTICE
Section 4216 of the Government Code requires that a City Mark Identification Number be issued before a "Permit to Excavate" will be valid. For your City Mark I.D. Number Call Underground Service Alert
TOLL FREE 1-800-422-4133
Two working days before you dig.

CAUTION!!!
CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS AND POINTS OF CONNECTION FOR POTENTIAL CONFLICT PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF WORK SUFFICIENTLY IN ADVANCE TO PERMIT POTENTIAL MODIFICATION PLANS.

NOTE:
THIS SHEET IS PROVIDED FOR INFORMATION ONLY. THE CITY ENGINEER'S SIGNATURE ON THESE PLANS DOES NOT CONSTITUTE APPROVAL OF ANY OF THESE NOTES AND THE CITY WILL NOT BE RESPONSIBLE FOR THEIR ENFORCEMENT.

PRIVATE CONTRACT

BIOCLEAN DETAILS FOR:

MERGE 56 - UNIT 1

LOTS 1-7 AND "A"-"F" OF MAP 16433

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 87 OF 40 SHEETS

PROJECT NO. 596359

FOR CITY ENGINEER _____ DATE _____

V.T.M. 1266780

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	LAT33			
AS-BUILTS				

1926-6283
NAD83 COORDINATES

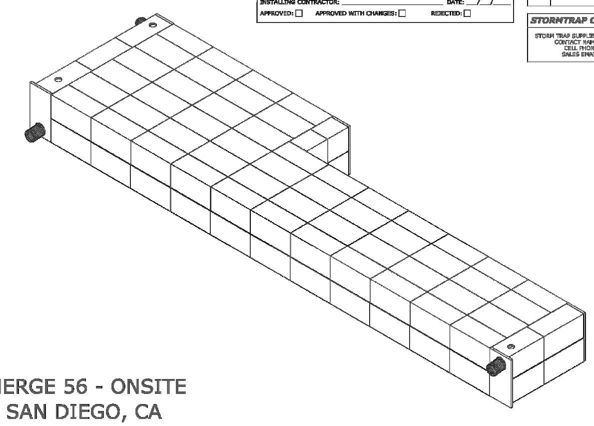
286-1723
LAMBERT COORDINATES

CONTRACTOR _____ DATE STARTED _____
INSPECTOR _____ DATE COMPLETED _____

40552- 37 -D

NEW SHEET

StormTrap®
MODULAR CONCRETE STORMWATER MANAGEMENT



MERGE 56 - ONSITE
SAN DIEGO, CA

STORMTRAP

BY SIGNING THIS DOCUMENT YOU AGREE WITH THE PIPE INVERT ELEVATIONS, ACCESS OPENING SIZES AND LOCATIONS, PIPE MATERIAL, PIPE DIAMETERS, AND PIPE LOCATIONS OF THE DRAWINGS DATED ________ IN ADDITION YOU AGREE WITH THE GENERAL LAYOUT OF THE BASIN AND BASIN HEIGHT, MIN AND MAX COVER OVERTOP THE SYSTEM, DELIVERY NOTES AND ALL SPECIFIC DESIGN ELEMENTS CONTAINED HEREIN. THE STRUCTURAL INTEGRITY OF THE SYSTEM IS THE RESPONSIBILITY OF STORMTRAP.

GENERAL CONTRACTOR: ________ DATE: __/__/__
APPROVED: ☐ APPROVED WITH CHANGES: ☐ REJECTED: ☐
CIVIL ENGINEER: ________ DATE: __/__/__
APPROVED: ☐ APPROVED WITH CHANGES: ☐ REJECTED: ☐
INSTALLING CONTRACTOR: ________ DATE: __/__/__
APPROVED: ☐ APPROVED WITH CHANGES: ☐ REJECTED: ☐

SHEET INDEX

STORMTRAP CONTACT INFORMATION

STORM TRAP SUPPLIER: STORMTRAP
CONTACT NAME: CHARLIE CARTER
CELL PHONE: 760-212-5628
SALES EMAIL: CCARTER@STORMTRAP.COM

StormTrap®
1287 WINDHAM PARKWAY
ROMEOVILLE, IL 60446
P:815-941-4549 / F:331-318-5347

ENGINEER INFORMATION:
LATITUDE 33 PLANNING & ENGINEERING
9969 HIBERT ST 2ND FL
SAN DIEGO, CA 92131
PHONE:(858)751-0533

PROJECT INFORMATION:
MERGE 56
ONSITE
SAN DIEGO, CA

CURRENT ISSUE DATE: 12/10/2020

ISSUED FOR: APPROVAL

REV.	DATE:	ISSUED FOR:	DWN BY:
8	12/10/2020	APPROVAL	RJL
7	11/23/2020	APPROVAL	RJL
6	10/9/2020	APPROVAL	JPH
5	7/8/2019	APPROVAL	GS
4	4/19/2019	APPROVAL	GS
3	4/8/2019	APPROVAL	GS
2	10/2/2018	PRELIMINARY	GS

SCALE: NTS

SHEET TITLE: COVER SHEET

SHEET NUMBER: **0.0**

STRUCTURAL DESIGN LOADING CRITERIA

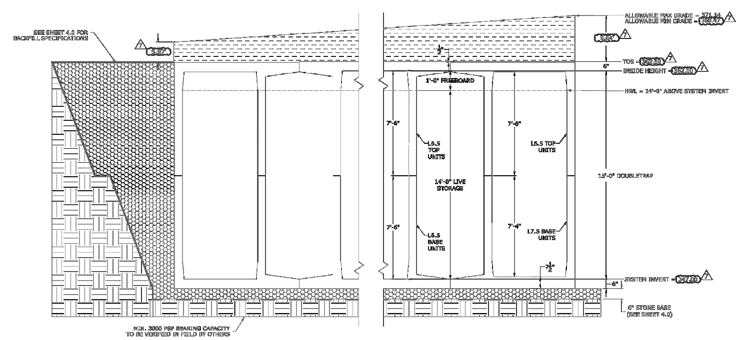
LIVE LOADING: AASHTO HS-20 HIGHWAY LOADING
GROUND WATER TABLE: BELOW INVERT OF SYSTEM
SOIL BEARING PRESSURE: 3000 PSF
SOIL DENSITY: 120 PCF
EQUIVALENT UNSATURATED LATERAL ACTIVE EARTH PRESSURE: 35 PSF / FT.
EQUIVALENT SATURATED LATERAL ACTIVE EARTH PRESSURE: 80 PSF/FT. (IF WATER TABLE PRESENT)
APPLICABLE CODES: AASHTO, ACI-318
BACKFILL TYPE: ¾" STONE AGGREGATE

STORMTRAP SYSTEM INFORMATION

WATER STORAGE PROV @ HWL: 85305.23 CUBIC FEET
UNIT HEADROOM: 15'-0" DOUBLETRAP
UNIT QUANTITY: 118 TOTAL UNITS

SITE SPECIFIC DESIGN CRITERIA

1. STORMTRAP UNITS SHALL BE MANUFACTURED AND INSTALLED ACCORDING TO SHOP DRAWINGS APPROVED BY THE INSTALLING CONTRACTOR AND ENGINEER OF RECORD. THE SHOP DRAWINGS SHALL INDICATE SIZE AND LOCATION OF ROOF OPENINGS AND INLET/OUTLET PIPE TYPES, SIZES, INVERT ELEVATIONS AND SIZE OF OPENINGS.
2. COVER RANGE: MIN. 5.97' MAX. 8.54' CONSULT STORMTRAP FOR ADDITIONAL COVER OPTIONS.
3. ALL DIMENSIONS AND SOIL CONDITIONS, INCLUDING BUT NOT LIMITED TO GROUNDWATER AND SOIL BEARING CAPACITY ARE REQUIRED TO BE VERIFIED IN THE FIELD BY OTHERS PRIOR TO STORMTRAP INSTALLATION.
4. FOR STRUCTURAL CALCULATIONS THE GROUND WATER TABLE IS ASSUMED TO BE BELOW INVERT OF SYSTEM. IF WATER TABLE IS DIFFERENT THAN ASSUMED, CONTACT STORMTRAP.



15'-0" DOUBLETRAP

StormTrap®
1287 WINDHAM PARKWAY
ROMEOVILLE, IL 60446
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ENGINEER INFORMATION:
LATITUDE 33 PLANNING & ENGINEERING
9969 HIBERT ST 2ND FL
SAN DIEGO, CA 92131
PHONE:(858)751-0533
PROJECT INFORMATION:
MERGE 56
ONSITE
SAN DIEGO, CA
CURRENT ISSUE DATE: 12/10/2020
ISSUED FOR: APPROVAL

SCALE: NTS

SHEET TITLE: DOUBLETRAP DESIGN CRITERIA

SHEET NUMBER: **1.0**

BILL OF MATERIALS

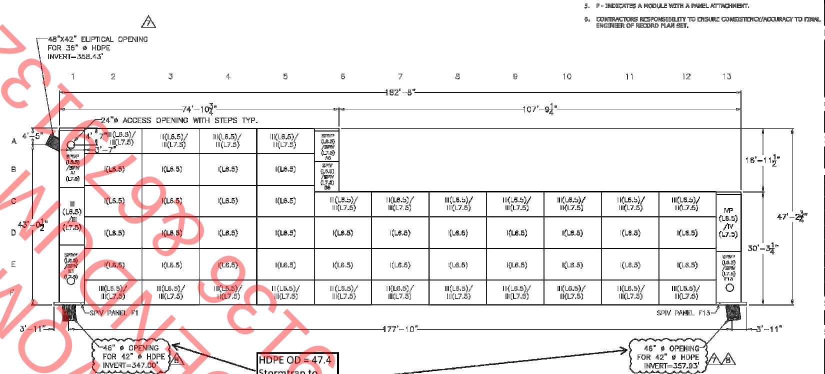
QTY.	UNIT TYPE	DESCRIPTION	TOP WEIGHT	BASE WEIGHT
30	I	15'-0" DOUBLETRAP	18696	19009
0	II	15'-0" DOUBLETRAP	18640	23721
23	III	15'-0" DOUBLETRAP	20673	24092
3	IV	15'-0" DOUBLETRAP	23075	28238
3	SPIV	15'-0" DOUBLETRAP	VARIES	VARIES
5	PANEL	6" THICK PANELS	VARIES	
14	JOINT WRAP	150' PER ROLL		
72	JOINT TAPE	14.5' PER ROLL		

LOADING DISCLAIMER:

STORMTRAP IS NOT DESIGNED TO ACCEPT ANY ADDITIONAL LOADINGS FROM NEARBY STRUCTURES NEXT TO OR OVER THE TOP OF STORMTRAP. IF ADDITIONAL LOADING CONSIDERATIONS ARE REQUIRED FOR STRUCTURAL DESIGN OF STORMTRAP, PLEASE CONTACT STORMTRAP IMMEDIATELY.

DESIGN CRITERIA
ALLOWABLE MAX GRADE = 371.14
ALLOWABLE MIN GRADE = 368.47
INSIDE HEIGHT ELEVATION = 362.00
SYSTEM INVERT = 347.00

NOTES:
1. DIMENSIONING OF STORMTRAP SYSTEM SHOWN BELOW ALLOW FOR A 3/4" GAP BETWEEN EACH MODULE.
2. ALL DIMENSIONS TO BE VERIFIED IN THE FIELD BY OTHERS.
3. SEE SHEET 3.0 FOR INSTALLATION SPECIFICATIONS.
4. SP - INDICATES A MODULE WITH MODIFICATIONS.
5. P - INDICATES A MODULE WITH A PANEL ATTACHMENT.
6. CONTRACTORS RESPONSIBILITY TO ENSURE CONSISTENCY/ACCURACY TO FINAL ENGINEER OF RECORD PLAN SET.



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PROJECT INFORMATION:
MERGE 56
ONSITE
SAN DIEGO, CA
CURRENT ISSUE DATE: 12/10/2020
ISSUED FOR: APPROVAL

SCALE: NTS

SHEET TITLE: DOUBLETRAP SYSTEM LAYOUT

SHEET NUMBER: **2.0**

STORMTRAP ENGINEER'S STATEMENT

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STEVEN WILLIAM SCHAUB
R.C.E. 61570

DATE REGISTRATION
EXPIRES: 06/30/2021

DIGALERT 811

IMPORTANT NOTICE
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PRIVATE CONTRACT

STORMTRAP DETAILS FOR:
MERGE 56 - UNIT 1
LOTS 1-7 AND "A"-"F" OF MAP 16433

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET **38** OF **40** SHEETS

PROJECT NO. 596359
V.T.M. 1266780

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	LAT33			

FOR CITY ENGINEER ____ DATE ____

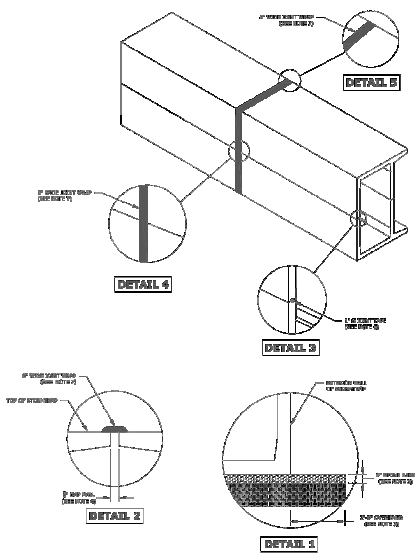
1926-6283 NAD83 COORDINATES
286-1723 LAMBERT COORDINATES

AS-BUILTS
CONTRACTOR ________ DATE STARTED ________
INSPECTOR ________ DATE COMPLETED ________

NEW SHEET

STORMTRAP INSTALLATION SPECIFICATIONS

1. STORMTRAP SHALL BE INSTALLED IN ACCORDANCE WITH ASTM C891, STANDARD FOR INSTALLATION OF UNDERGROUND PRECAST CONCRETE UTILITY STRUCTURES, THE FOLLOWING ADDITIONS AND/OR EXCEPTIONS SHALL APPLY:
2. IT IS THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR, TO ENSURE THAT PROPER EXCAVATION EQUIPMENT IS USED TO ACCOMPLISH THE PROJECT.
3. STORMTRAP MODULES CAN BE PLACED ON A LEVEL, OR FLUCTUATION OF ± APPROACH GRADIENT OF UP TO 2% ALONG THE LENGTH OF THE SYSTEM (SEE DETAIL 1) AND SHALL BE PLACED ON PROPERLY COMPACTED SOILS (SEE SPEC 1.0 FOR SOIL BEARING CAPACITY REQUIREMENTS), AND IN ACCORDANCE WITH ASTM C891, STANDARD PRACTICE FOR INSTALLATION OF UNDERGROUND PRECAST UTILITY STRUCTURES.
4. THE STORMTRAP MODULES SHALL BE PLACED SUCH THAT THE MINIMUM SPACE BETWEEN ADJACENT MODULES DOES NOT EXCEED 3" (SEE DETAIL 3). IF THE SPACE EXCEEDS 3", THE MODULES SHALL BE MOVED TO APPROXIMATELY ACCOMPLISH THIS GOAL WITHOUT CAUSING DAMAGE TO THE MODULES OR THE PIPE CONNECTIONS.
5. STORMTRAP MODULES ARE NOT WATERTIGHT. IF A WATERTIGHT SOLUTION IS REQUIRED, CONTACT STORMTRAP FOR RECOMMENDATIONS. THE WATERTIGHT APPLICATION IS TO BE PERFORMED AND IMPLEMENTED BY THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT THE SELECTED WATERTIGHT SOLUTION PERFORMS AS SPECIFIED BY THE MANUFACTURER.
6. THE REQUIRED CONNECTION, JOINT BETWEEN STARTER AND BASE END CONNECTION OR THE STORMTRAP MODULES SHALL BE SEALED WITH POLYMERIC, SELF-LEVELING, SELF-ADHERING PLASTOMERIC BAND, SUPPLIED TO A MINIMUM THICKNESS OF 60 MILS. THE SEALANT SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS. CONNECTIONS TO ANY END WALL NOT SUPPLIED BY STORMTRAP SHALL BE REVIEWED AND APPROVED BY STORMTRAP PRIOR TO INSTALLATION. CONSULT STORMTRAP'S INSTALLATION GUIDE FOR DETAILS.
7. ALL SEGMENTAL JOINTS BETWEEN ADJACENT STORMTRAP MODULES SHALL BE SEALED WITH 6" WIDE NON-WOVEN, POLY-MATRIX, SELF-ADHERING PLASTOMERIC BAND, SUPPLIED TO A MINIMUM THICKNESS OF 60 MILS. THE SEALANT SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS. CONNECTIONS TO ANY END WALL NOT SUPPLIED BY STORMTRAP SHALL BE REVIEWED AND APPROVED BY STORMTRAP PRIOR TO INSTALLATION. CONSULT STORMTRAP'S INSTALLATION GUIDE FOR DETAILS.
   - 7.1. USE A PRIMER ON WET CAST TO THOROUGHLY CLEAN THE OUTSIDE SURFACE OF THE JOINT WHERE SEALANT WILL BE TO BE APPLIED.
   - 7.2. A RELEASE PAPER PROTECTS THE ADHESIVE SIDE OF THE JOINT WRAP. PLACE THE ADHESIVE TAPE ADHESIVE SIDE DOWN ACROSS THE STRUCTURE, REMOVING THE RELEASE PAPER AS YOU GO. PRESS THE JOINT WRAP FIRMLY AGAINST THE STORMTRAP MODULE SURFACE WHEN APPLYING.
8. IF THE CONTRACTOR NEEDS TO CANCEL ANY INSPECTION, THEY MUST DO SO 48 HOURS PRIOR TO THEIR SCHEDULED ARRIVAL AT THE JOB SITE TO CANCELED AFTER THAT TIME, PLEASE CONTACT THE PROJECT MANAGER.
9. IF THE STORMTRAP MODULES ARE DAMAGED IN ANY WAY DURING, DURING, OR AFTER INSTALL, STORMTRAP MUST BE CONTACTED IMMEDIATELY for Assistance in the Evaluation and the Determination whether or not the Module will Need to be Repaired. IF ANY SHALL ARISE IN THE COURSE BETWEEN THE PARTIES TO CONTACT STORMTRAP IMMEDIATELY. ANY DAMAGE NOT REPORTED BEFORE THE TRUCK IS UNLOADED WILL BE THE CONTRACTOR'S RESPONSIBILITY.
10. STORMTRAP MODULES CAN NOT BE ALTERED IN ANY WAY AFTER MANUFACTURING WITHOUT WRITTEN CONSENT FROM STORMTRAP.



StormTrap
1227 MCMORRIS PARKWAY
ROBINSVILLE, IL 62440
PHONE: 866-786-7627 / FAX: 618-544-8797

ENGINEER INFORMATION:
LATITUDE 33 PLANNING & ENGINEERING
9990 KENNETT ST 2ND FL
SAN DIEGO, CA 92131
PHONE: (858)751-6633

PROJECT INFORMATION:
MERGE 56
ONSITE
SAN DIEGO, CA

CURRENT ISSUE DATE: 12/9/2020
ISSUED FOR: APPROVAL

REV.	DATE:	ISSUED FOR:	CHK'D BY:
7	11/23/2020	APPROVAL	RVL
6	11/20/2020	APPROVAL	RVL
5	10/7/2020	APPROVAL	JRS
4	9/28/2020	APPROVAL	RVL
3	9/21/2020	APPROVAL	JRS
2	9/14/2020	APPROVAL	RVL
1	9/8/2020	PRELIMINARY	RVL

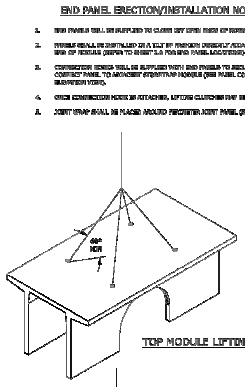
SCALE: NTS

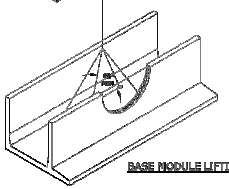
SHEET TITLE: DOUBLETRAP INSTALLATION SPECIFICATIONS

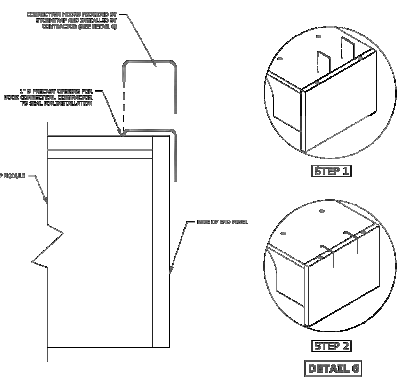
SHEET NUMBER: 3.0

END PANEL ERECTION/INSTALLATION NOTES

1. END PANELS SHALL BE SUPPLIED TO CLOSE OFF OPEN ENDS OF SYSTEM.
2. PANELS SHALL BE INSTALLED IN A WAY BY WHICH OVERLAP ADJACENT TO OPEN END OF MODULE (REFER TO SHEET 1.0 FOR END PANEL LOCATIONS).
3. CONNECTION BOLTS SHALL BE SUPPLIED WITH END PANELS TO SECURELY CONTACT PANEL TO ADJACENT STORMTRAP MODULE (SEE PANEL CONNECTION ELEVATION VIEW).
4. ONCE CONSTRUCTION HOOK IS ATTACHED, LIFTING CLUTCHES MAY BE REMOVED.
5. JOINT WRAP SHALL BE PLACED AROUND PERIMETER JOINT PANEL (SEE SHEET 3.0).







StormTrap
1227 MCMORRIS PARKWAY
ROBINSVILLE, IL 62440
PHONE: 866-786-7627 / FAX: 618-544-8797

ENGINEER INFORMATION:
LATITUDE 33 PLANNING & ENGINEERING
9990 KENNETT ST 2ND FL
SAN DIEGO, CA 92131
PHONE: (858)751-6633

PROJECT INFORMATION:
MERGE 56
ONSITE
SAN DIEGO, CA

CURRENT ISSUE DATE: 12/10/2020
ISSUED FOR: APPROVAL

REV.	DATE:	ISSUED FOR:	CHK'D BY:
7	11/23/2020	APPROVAL	RVL
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2	9/14/2020	APPROVAL	RVL
1	9/8/2020	PRELIMINARY	RVL

SCALE: NTS

SHEET TITLE: DOUBLETRAP INSTALLATION SPECIFICATIONS

SHEET NUMBER: 3.1

ZONE CHART

ZONES	ZONE DESCRIPTION	ZONE DEPTH
ZONE 1	FOUNDATION REINFORCING	AS PER ENGINEER'S ASSESSMENT (SEE NOTE 1 BELOW)
ZONE 2	BACKFILL	MINIMUM DEPTH IS AS REQUIRED BY ENGINEER'S ASSESSMENT FOR APPROVED BACKFILL MATERIAL
ZONE 3	PAVING COMBO OVERLAY	MINIMUM 6" BUT NOT TO EXCEED 12"

FILL DEPTH	TRUCK WHEEL	TIRE CONTACT AREA (SQ. INCHES)	PUBLISHED TIRE PRESSURE
12"	4 OF	77.8	1,800 psf
	6 OF	69.1	1,725 psf
	8 OF	55.1	1,515 psf
	10 OF	49.2	1,500 psf
	12 OF	46.4	1,500 psf

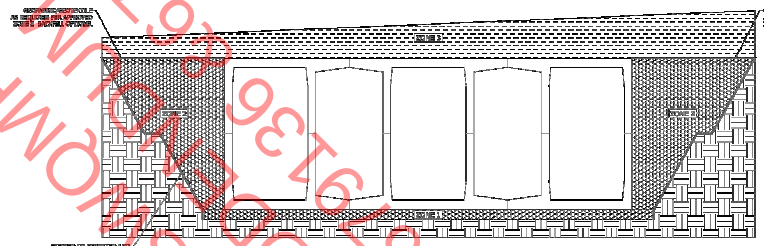
NOTES:
TRUCK LENGTH NOT TO EXCEED 12'-0".
ONLY TWO TRUCKS PER VEHICLE.

APPROVED ZONE 2 BACKFILL OPTIONS

OPTION	DESCRIPTION
1 (PREFERRED)	THE ENTIRE ASSEMBLY SHALL CONSIST OF CLEAN AND FREE DRAINING ANGULAR MATERIAL. THE ZONE 2 FILL MATERIAL SHALL BE PLACED IN LIFTS NOT EXCEEDING 12" AND COMPACTED TO THE REQUIRED DENSITY AS SPECIFIED BY THE ENGINEER OF RECORD. THE FOLLOWING ARE ACCEPTABLE MATERIALS FOR USE IN ZONE 2 BACKFILL. CARE SHOULD BE TAKEN IN THE SELECTION OF THE MATERIAL, WHICH SHALL NOT BE CONSIDERED OF THE ENGINEER'S JUDGEMENT.
2	THE FOLLOWING MATERIALS ARE ACCEPTABLE FOR USE IN ZONE 2 BACKFILL AND PIPE EMBEDMENT. THE MATERIALS SHALL BE PLACED IN LIFTS NOT EXCEEDING 12" AND COMPACTED TO THE REQUIRED DENSITY AS SPECIFIED BY THE ENGINEER OF RECORD. THE FOLLOWING ARE ACCEPTABLE MATERIALS FOR USE IN ZONE 2 BACKFILL. CARE SHOULD BE TAKEN IN THE SELECTION OF THE MATERIAL, WHICH SHALL NOT BE CONSIDERED OF THE ENGINEER'S JUDGEMENT.
CLASS 2 PERMEABLE AGGREGATE	CLASS 2 PERMEABLE AGGREGATE CONSISTS OF CRUSHED STONE, CRUSHED GRAVEL, OR CLEAN GRAVEL MIXTURES MEETING THE GRADATION SHALL RANGE BETWEEN THE FOLLOWING LIMITS WHEN TESTED IN ACCORDANCE WITH ASTM C136. THE MATERIAL SHALL BE OBTAINED FROM APPROVED SOURCES.
CLASS 6 PERMEABLE AGGREGATE	CLASS 6 PERMEABLE AGGREGATE CONSISTS PRIMARILY OF CRUSHED STONE, OR CLEAN GRAVEL MIXTURES MEETING THE GRADATION SHALL RANGE BETWEEN THE FOLLOWING LIMITS WHEN TESTED IN ACCORDANCE WITH ASTM C136. THE MATERIAL SHALL BE OBTAINED FROM APPROVED SOURCES.
SAND PADS	SAND PADS SHALL BE PLACED AT THE 2-0" BASE PADS AND HAVE 10% PASSING THE #200 SIEVE (WITH NON-PLASTIC FINES) AS PER ASTM D2419.

STORMTRAP ZONE INSTALLATION SPECIFICATIONS/GUIDELINES

1. THE FILL PLACED ABOVE THE STORMTRAP MODULES MUST CONSIST OF CLEAN SAND OR STONE IN THE ZONE AND TO ASSESSMENT. THE SAND DEPOSITED AT ITS TOP SHALL THEN FILL BEHIND THE SIDE WALL. BE PERFORMED 6"-12" ABOVE THE TOP OF THE CONCRETE AREA. BACKFILL SHALL ENSURE BE COMPACTED AREAS PREVIOUS TO INSTALLING THE BACKFILL ASSESSMENT. THE PATTERN, IT WILL CONTAIN AND PROPERLY OPEN LOCATIONS. CARE SHALL BE TAKEN TO PREVENT ANY VEHICLES ACCESS AREAS. THE DEPARTMENT, AND ALL EQUIPMENT MUST BE STOPPED OR DIRECTED TO PREVENT VEHICLES ACTION. CARE SHALL ALSO BE TAKEN AS NOT TO DISTURB THE "VAULT" PART FROM THE "JOINT" BELOW THE BACKFILL PROCESS. BACKFILL PLANT OR PUSH-MACHINE PLACEMENT. SEE ZONE 2 BACKFILL CHART FOR THE BASE FOR APPROVED BACKFILL OPTIONS. IF NATIVE SOILS IS ACCEPTABLE TO PERFORM, COMPACTION WITH SATISFACTORY, EFFICIENT AND PROPER PROTECTION AS REQUIRED PROCESS BY ENGINEER.
2. DURING PLACEMENT OF MATERIAL, ENSURE THE SYSTEM, AT NO TIME SHALL MACHINERY BE USED DIRECTLY OVER THE MODULES IN UNDER LOCATIONS OF THE SYSTEM. WHEN PLACING OF MATERIAL DIRECTLY, HOWEVER, SHALL BE PLACED OVER THE THE DIRECTION OF PLACEMENT IS PARALLEL WITH THE OVERALL LONGITUDINAL DIRECTION OF THE SYSTEM WHENEVER POSSIBLE.
3. THE FILL PLACED OVERTOP THE SYSTEM SHALL BE PLACED AT A MINIMUM OF 12" LEVEL AT ANY TIME SHALL PRACTICE OF VEHICLES OPERATION THAT THE DESIGN FROM UNDERGROUND TRAVEL OVERTOP THE ASSETS WITHOUT THE MINIMUM DESIGN COVERAGE. AT TIMES, IS NECESSARY OPERATE THE SYSTEM PRIOR TO ACCESSING THE MINIMUM DESIGN COVER, IT MAY BE NECESSARY TO REDUCE THE ALLOWED LOCATION OF THE OPERATING MACHINERY SO AS TO NOT EXCEED THE MINIMUM CAPACITY OF THE ASSETS. IN SOME CASES, IN ORDER TO ACHIEVE REQUIRED COMPACTION, HAND COMPACTION MAY BE NECESSARY TO ENSURE SAFETY BEHIND THE ELECTRIC DESIGN LOADING, AND STAFF FOR TRAINED VEHICLES WITH AND ALLOWABLE MINIMUM PRESSURE PER TRACK.
4. ZONE 2 ASSESSMENT FOUNDATION TO ENSURE IS NO RECOMMENDED FOR LIVE-LOAD SUBGRADE ONLY (OPTIONAL).



StormTrap
1227 MCMORRIS PARKWAY
ROBINSVILLE, IL 62440
PHONE: 866-786-7627 / FAX: 618-544-8797

ENGINEER INFORMATION:
LATITUDE 33 PLANNING & ENGINEERING
9990 KENNETT ST 2ND FL
SAN DIEGO, CA 92131
PHONE: (858)751-6633

PROJECT INFORMATION:
MERGE 56
ONSITE
SAN DIEGO, CA

CURRENT ISSUE DATE: 12/9/2020
ISSUED FOR: APPROVAL

REV.	DATE:	ISSUED FOR:	CHK'D BY:
7	11/23/2020	APPROVAL	RVL
6	11/20/2020	APPROVAL	RVL
5	10/7/2020	APPROVAL	JRS
4	9/28/2020	APPROVAL	RVL
3	9/21/2020	APPROVAL	JRS
2	9/14/2020	APPROVAL	RVL
1	9/8/2020	PRELIMINARY	RVL

SCALE: NTS

SHEET TITLE: DOUBLETRAP BACKFILL SPECIFICATIONS

SHEET NUMBER: 4.0

DIG ALERT 811

IMPORTANT NOTICE
Section 4216 of the Government Code requires that a City Mark Identification Number be issued before a "Permit to Excavate" will be valid. For your City Mark I.D. Number Call Underground Service Alert
TOLL FREE 1-800-422-4133
Two working days before you dig.

CAUTION!!!
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NOTE:
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STORMTRAP ENGINEER'S STATEMENT

THE MANUFACTURER'S DETAILS AND CUT SHEETS INCLUDED HEREON HAVE BEEN DESIGNED BY STORMTRAP BASED UPON DESIGN INFORMATION PROVIDED BY LATITUDE 33 PLANNING AND ENGINEERING. STORMTRAP ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE REQUIRED "VAULT STORAGE REQUIREMENTS OR ORIFICE SIZING" PROVIDED HEREON. THE ENGINEER'S STAMP ON THIS DRAWING IS MEANT TO ASSURE THAT THE DEVICES SHOWN ARE STRUCTURALLY COMPETENT AND WILL PERFORM TO THE EXTENT DETAILED HEREON PROVIDED THAT THE PROPER OPERATIONS AND MAINTENANCE PROCEDURES ARE FOLLOWED TO PRESERVE THE DEVICES' FUNCTIONALITY. IT IS THE RESPONSIBILITY OF THE OWNER TO PROVIDE ONGOING MAINTENANCE INTO PERPETUITY AS OUTLINED IN THE "STORM WATER MANAGEMENT AND DISCHARGE CONTROL MAINTENANCE AGREEMENT APPROVAL #2262507". REVISIONS TO THIS DETAIL MAY BE REQUIRED IF SOIL CONDITIONS ON SITE ARE FOUND TO BE DIFFERENT FROM WHAT IS REPORTED IN THE GEOTECHNICAL INVESTIGATION.

STEVEN WILLIAM SCHAUB
R.C.E. 61570

DATE REGISTRATION EXPIRES: 06/30/2021

PRIVATE CONTRACT

STORMTRAP DETAILS FOR:

MERGE 56 - UNIT 1

LOTS 1-7 AND "A"-"F" OF MAP 16433

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 39 OF 40 SHEETS

PROJECT NO. 596359

V.T.M. 1266780

FOR CITY ENGINEER _____ DATE _____

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	LAT33			
AS-BUILTS				

1926-6283
NAD83 COORDINATES

286-1723
LAMBERT COORDINATES

CONTRACTOR _____ DATE STARTED _____
INSPECTOR _____ DATE COMPLETED _____

40552-39-D

NEW SHEET

RECOMMENDED ACCESS OPENING SPECIFICATION

1. A VERTICAL ACCESS OPENING FOR THE STORMTRAP SYSTEM ARE 2'-0" IN DIAMETER. ACCESS OPENINGS LOCATED MORE THAN 3'-0" FROM THE INLET(S) OR OUTLET(S) AS AUTHORIZED BY STORMTRAP, ALL OVERHEAD OBJECTS MUST REMAIN AT LEAST 1'-0" OF CLEARANCE FROM THE TOP OF THE RECOMMENDED PARALLELOGRAM PATTERN OF OPENINGS. ALL ACCESS OPENINGS TO BE LOCATED ON GRADES LESS THAN OR EQUAL TO THE SPECIFIED GRADE.
2. PLASTIC COATED STEEL STEP MANUFACTURED BY M.A. INDUSTRIES PART #PS3-PFU OR APPROVED EQUAL (3" x 7" x 12" STEP, 7" PROJECTION, 12" STEP WIDTH, 16" STEP SPACING, REINFORCED). THE HIGHEST STEP IN THE MODULE IS TO BE PLACED A MAXIMUM OF 6" BELOW THE ACCESS OPENING OF THE STORMTRAP MODULE. ALL ENGINEERED STEPS SHALL BE PLACED AT A MAXIMUM SPACING OF 16" ON CENTER. STEPS SHALL NOT BE PLACED IN CORNERS OR ALCOVES TO AVOID INTERFERENCE OF STEPS. STEPS SHALL NOT BE PLACED IN THE MODULE.
3. STORMTRAP LIFTING HOOKS MAY BE RELOCATED TO AVOID INTERFERENCE WITH ACCESS OPENINGS OR THE CENTER OF GRAVITY OF THE MODULE AS NEEDED.
4. STORMTRAP ACCESS OPENINGS MAY BE LOCATED TO AVOID INTERFERENCE WITH INLET PIPE(S) OR OUTLET PIPE DEPENDING ON ELEVATION OF PIPE IN STORMTRAP.
5. ACCESS OPENINGS SHOULD BE LOCATED TO ASSIST IN EASY OF APPROPRIATE SELECTED MAINTENANCE. STORMTRAP RECOMMENDS AT LEAST TWO ACCESS OPENINGS FOR ACCESS AND INSPECTION.
6. ANY PLACED MATERIAL USED IN AREAS TO BE USED FOR FINAL GRADE, SUCH AS BACKFILLING FOR CURB INLETS, SHALL BE COMPACTED TO 95% COMPACTION. (STANDARD BY OTHERS)

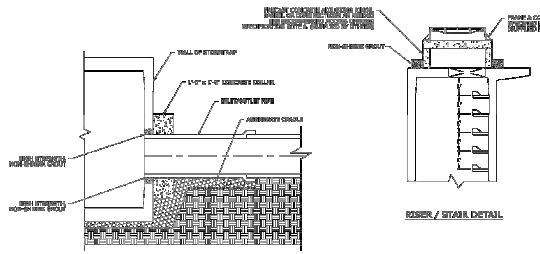
RECOMMENDED PIPE OPENING SPECIFICATION

1. MINIMUM PIPE DISTANCE FOR AN OPENING ON THE CORRUGATED WALL SHALL BE AS LONG AS 1'-0".
2. MAXIMUM OPENING SIZE TO BE DETERMINED BY THE MODULE MANUFACTURER. PREFERRED OPENING SIZE IS 24" DIA. ANY OPENING LARGER THAN 24" DIA. MUST BE APPROVED BY STORMTRAP. ALL OPENINGS LARGER THAN 24" DIA. MUST BE REVIEWED BY STORMTRAP FOR STRUCTURAL INTEGRITY.
3. CONNECTING PIPES SHALL BE CENTERED WITH A 1'-0" CONCRETE COLLAR, AND BE APPROPRIATE CRACK FREE AT LEAST ONE PIPE DIAMETER (PER PIPE CONNECTION DETAIL). A STRUCTURAL GRADE CONCRETE OR HIGH STRENGTH, NON-SHRINK GROUT THAT IS A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 5000 PSI SHALL BE USED.
4. THE ANNULAR SPACE BETWEEN THE PIPE AND THE HOLE SHALL BE FILLED WITH HIGH STRENGTH NON-SHRINK GROUT.

RECOMMENDED PIPE INSTALLATION INSTRUCTIONS

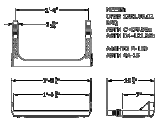
1. CLEAN AND LIGHTLY LUBRICATE ALL OF THE PIPE TO BE INSERTED INTO STORMTRAP.
2. IF PIPE IS CUT, CARE SHOULD BE TAKEN TO ASSURE NO BURR EXISTS. BURR AND LUBRICATE LESS END OF PIPE.
3. ALIGN CENTER OF PIPE TO CONNECT ELBOWING AND INSERT INTO OPENING.

NOTES: ALL ANCILLARY INSTALLATIONS/PROCEDURES RECOMMENDED ARE GIVEN OR THIS SHEET ARE USER RECOMMENDATIONS ONLY AND SUBJECT TO CHANGE PER THE PERSONNEL CONTRACTOR, AGENCY, OR LOCAL MUNICIPAL CODE REQUIREMENTS.



PIPE CONNECTION DETAIL

RISER / STAIR DETAIL



STEP DETAIL

StormTrap

1325 VERCHAN PARKWAY
ESCONDIDO, CA 92029
Phone:(858)751-2633 Fax:(760)510-0097

ENGINEER INFORMATION:

LATITUDE 33 PLANNING & ENGINEERING
9668 MIRAMAR RD, SUITE 140
SAN DIEGO, CA 92126
PHONE:(858)751-0633

PROJECT INFORMATION:

MERGE 56
ENCINITAS
SAN DIEGO, CA

CURRENT ISSUE DATE:

12/10/2020

ISSUED FOR:

APPROVAL

REV	DATE:	ISSUED FOR:	CHK'D BY:
1	12/10/2020	APPROVAL	RJS
0	11/17/2020	APPROVAL	RJS
9	10/13/2020	APPROVAL	JPS
8	10/7/2020	APPROVAL	JPS
7	9/21/2020	APPROVAL	JPS
6	9/17/2020	APPROVAL	JPS
5	9/11/2020	APPROVAL	JPS
4	8/31/2020	APPROVAL	JPS
3	8/25/2020	APPROVAL	JPS
2	8/19/2020	APPROVAL	JPS
1	8/12/2020	APPROVAL	JPS

SCALE:

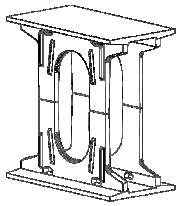
NTS

SHEET TITLE:

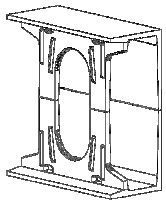
RECOMMENDED PIPE / ACCESS OPENING SPECIFICATIONS

SHEET NUMBER:

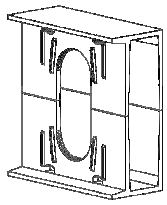
5.0



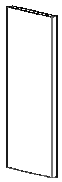
TYPE I



TYPE III



TYPE IV



TYPE IV END PANEL

NOTES:
1. OPENING LOCATIONS AND SHAPES MAY VARY.
2. 09 = INDICATES A MODULE WITH MODIFICATIONS.
3. F = INDICATES A MODULE WITH A PANEL ATTACHMENT.
4. POCKET WIDTH DIMENSIONS ARE OPTIONAL.

StormTrap

1325 VERCHAN PARKWAY
ESCONDIDO, CA 92029
Phone:(858)751-2633 Fax:(760)510-0097

ENGINEER INFORMATION:

LATITUDE 33 PLANNING & ENGINEERING
9668 MIRAMAR RD, SUITE 140
SAN DIEGO, CA 92126
PHONE:(858)751-0633

PROJECT INFORMATION:

MERGE 56
ENCINITAS
SAN DIEGO, CA

CURRENT ISSUE DATE:

12/10/2020

ISSUED FOR:

APPROVAL

REV	DATE:	ISSUED FOR:	CHK'D BY:
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0	11/17/2020	APPROVAL	RJS
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7	9/21/2020	APPROVAL	JPS
6	9/17/2020	APPROVAL	JPS
5	9/11/2020	APPROVAL	JPS
4	8/31/2020	APPROVAL	JPS
3	8/25/2020	APPROVAL	JPS
2	8/19/2020	APPROVAL	JPS
1	8/12/2020	APPROVAL	JPS

SCALE:

NTS

SHEET TITLE:

DOUBLETRAP MODULE TYPES

SHEET NUMBER:

6.0

DIG ALERT 811

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PRIVATE CONTRACT

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STEVEN WILLIAM SCHAUB
R.C.E. 61570

DATE REGISTRATION EXPIRES: 06/30/2021

STORMTRAP DETAILS FOR:

MERGE 56 - UNIT 1

LOTS 1-7 AND "A"-"F" OF MAP 16433

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 40 OF 40 SHEETS

PROJECT NO. 596359

V.T.M. 1266780

FOR CITY ENGINEER _____ DATE _____

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	LAT33			
AS-BUILTS				

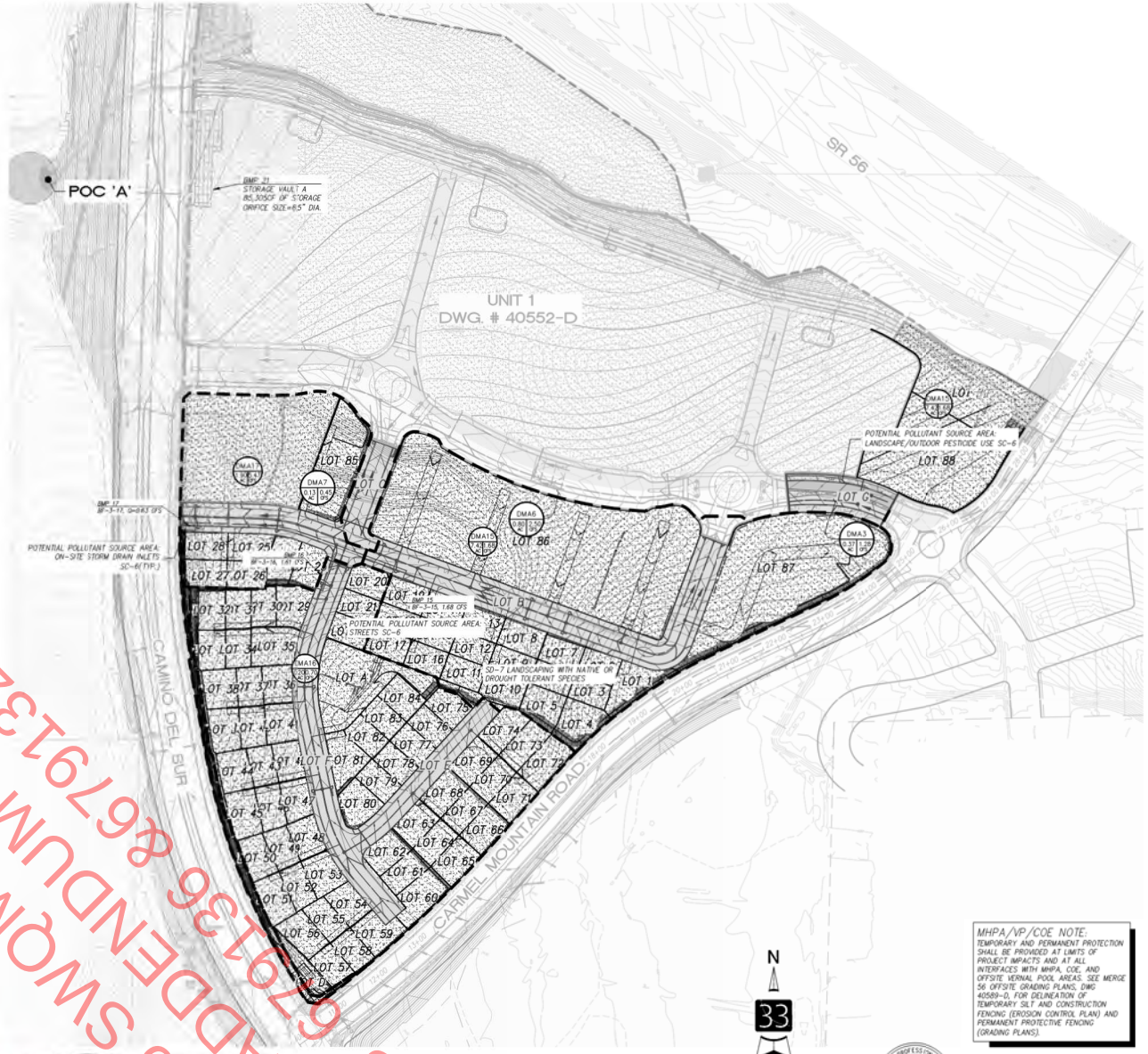
1926-6283
NAD83 COORDINATES

286-1723
LAMBERT COORDINATES

CONTRACTOR _____ DATE STARTED _____
INSPECTOR _____ DATE COMPLETED _____

40552- 40 -D

NEW SHEET



LEGEND

- SHEET FLOW PATH
- DMA (DRAINAGE MANAGEMENT AREA) BOUNDARY
- DMA AREA — DMA NUMBER AND AREA IN ACRES
- PERVIOUS AREA
- IMPERVIOUS AREA
- PROPOSED STORM DRAIN

POST-CONSTRUCTION BMP NOTES

1. FOR BMP DETAILS AND SPECIFICATIONS SEE SHEETS 15–17, 42 – 44.
2. SIGNAGE INDICATING THE LOCATION AND BOUNDARY OF ALL STRUCTURAL BMPs SHALL BE INSTALLED SUFFICIENT TO THE CITY ENGINEER.
3. FOR ACCESS AND MAINTENANCE PORTS & CLEAN-OUTS SEE DETAILS ON SHEET 15–17, 42 – 44.
4. NO MATERIALS TO BE EXPOSED TO STORMWATER RUNOFF.
5. NO BUILDING OR POLLUTANT GENERATING ACTIVITY AREAS ARE PROPOSED (FUELING, GARAGES, WASTE CONTAINERS, WASH RACKS, HAZARDOUS MATERIALS).
6. NO ONSITE AREAS OF POTENTIAL EROSION.
7. NO EXISTING DRINKING WATER WELLS.
8. FOR MAINTENANCE THRESHOLDS SPECIFIC TO STRUCTURAL BMP'S AND RECOMMENDED MAINTENANCE PROCEDURES, SEE BMP TABLE ON SHEET 3.

BMP AREA TABLE

BMP NO.	TREATMENT REQ'D	TREATMENT PROVIDED	TYPE	SWMDCMA APPROVAL #
1	0.081 CFS	0.087 CFS	MWS-L-4-8	250475
2	0.287 CFS	0.294 CFS	MWS-L-8-12	250478
3	0.072 CFS	0.073 CFS	MWS-L-4-6	250475
4	0.338 CFS	0.346 CFS	MWS-L-8-12	250475
5	0.059 CFS	0.067 CFS	MWS-L-4-6	250475
6	0.173 CFS	0.175 CFS	MWS-L-4-17	250475
7	0.039 CFS	0.052 CFS	MWS-L-4-8	250475
8	0.087 CFS	0.106 CFS	MWS-L-4-8	250475
9	0.112 CFS	0.115 CFS	MWS-L-4-8	250475
12	1622 SQFT	1849 SQFT	BIOFILTRATION BASIN	258422
13	2163 SQFT	2201 SQFT	BIOFILTRATION BASIN	258422
14	1097 SQFT	1150 SQFT	BIOFILTRATION BASIN	258422
15	1.678 CFS	1.680 CFS	(3) MWS-L-8-20	258415
16	1.605 CFS	1.629 CFS	(3) MWS-L-8-20	258415
17	0.632 CFS	0.693 CFS	MWS-L-8-24	258415

* BMPS LOCATED IN THE MERGE 56 UNIT 1 AREA

MHPA/VP/COE NOTE:
TEMPORARY AND PERMANENT PROTECTION SHALL BE PROVIDED AT LIMITS OF PROJECT IMPACTS AND AT ALL INTERFACES WITH MHPA, COE, AND OFFSITE VERNAL POOL AREAS. SEE MERGE 56 OFFSITE GRADING PLANS, DWG 40589-D, FOR DELINEATION OF TEMPORARY SILT AND CONSTRUCTION FENCING (EROSION CONTROL PLAN) AND PERMANENT PROTECTIVE FENCING (GRADING PLANS).

N

33

0 50 100 200 300
(IN FEET)
1 inch = 100 ft.

DIGALERT 811

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MATTHEW J. SEMIC
R.C.E. 71075
DATE:

DESIGNED BY:	PM REVIEW:	SURVEY REVIEW:
HUNSAKER	JRG	TJD

latitude 33
PLANNING & ENGINEERING
9668 Hibert Street 2nd Floor, San Diego, CA 92131
Tel 858.791.0893

PRIVATE CONTRACT

POST-CONSTRUCTION BMP PLAN FOR

MERGE 56 – UNIT 2

LOTS 1-89 and "A"-"T" OF MAP _____

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 42 OF 56 SHEETS

FOR CITY ENGINEER _____ DATE: _____

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	LAT33			
AS-BUILTS				

CONTRACTOR _____ DATE STARTED _____
INSPECTOR _____ DATE COMPLETED _____

PRIVATE I.D. # _____
I.F.M. _____
_____ NAD83 COORDINATES
_____ LAMBERT COORDINATES

40553-42-D

NEW SHEET

H:\1100\1176.30 MERGE 56\ENGINEERING\PLANS\GRADING\CONSTRUCTION CHANGE\CC'A' (UNIT 2) – PTS 679132\1176.3 GRD ON UNIT2-SHT 42 POST CON BMP PLAN CC 'A'.DWG 4/12/2021 3:29 PM

SITE SPECIFIC DATA

PROJECT NUMBER	11699
PROJECT NAME	MERGE 56 PHASE 2
PROJECT LOCATION	SAN DIEGO, CA
STRUCTURE ID	BF-3-15-1
TREATMENT REQUIRED	
VOLUME BASED (CF)	FLOW BASED (CFS)
N/A	0.260
TREATMENT HGL AVAILABLE (FT)	3.4
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE	OFFLINE

PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	372.00	PVC	8"
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	371.20	PVC	8"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	388.72	388.72	388.72
SURFACE LOAD	PEDESTRIAN	PEDESTRIAN	PEDESTRIAN
FRAME & COVER	22A H20	30A 30" X 48"	H20
RETAINAGE VOLUME (CF)			0.68
ORIFICE SIZE (DIA. INCHES)			ø0.39 DIA

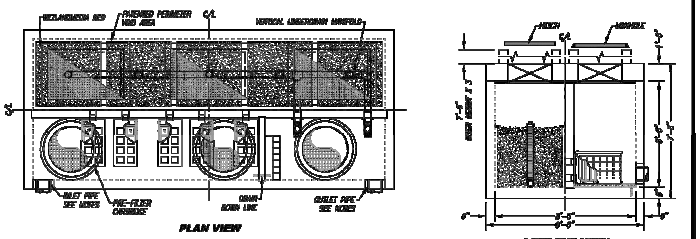
NOTES: PRELIMINARY NOT FOR CONSTRUCTION, UNIT PENDING FINAL STRUCTURAL REVIEW – DIMENSIONS ARE WRK.

INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS' SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. PIPES CANNOT INTRUDE BEYOND FLUSH. INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATERTIGHT PER MANUFACTURER'S STANDARD CONNECTION DETAIL.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL PIPES, HEADERS, MANIFOLDS, AND MATCHES. CONTRACTOR TO GROUT ALL MANIFOLDS AND MATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. VEGETATION SUPPLIED AND INSTALLED BY OTHERS. ALL UNITS WITH VEGETATION MUST HAVE DRIP OR SPRAY IRRIGATION SUPPLIED AND INSTALLED BY OTHERS.
7. CONTRACTOR RESPONSIBLE FOR COMMISSIONING BIO CLEAN FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A BIO CLEAN REPRESENTATIVE.

GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND QUANTITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT BIO CLEAN.



TREATMENT FLOW (CFS)	0.260
OPERATING HEAD (FT)	3.4
PRETREATMENT LOADING RATE (GPM/SF)	2.0
WETLAND MEDIA LOADING RATE (GPM/SF)	0.09

PREPARED AND COPYRIGHTED:

MWS-L-8-20-6'-0"-V-UG
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

SITE SPECIFIC DATA

PROJECT NUMBER	11699
PROJECT NAME	MERGE 56 PHASE 2
PROJECT LOCATION	SAN DIEGO, CA
STRUCTURE ID	BF-3-15-2
TREATMENT REQUIRED	
VOLUME BASED (CF)	FLOW BASED (CFS)
N/A	0.260
TREATMENT HGL AVAILABLE (FT)	3.4
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE	OFFLINE

PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	378.99	PVC	8"
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	378.69	PVC	8"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	387.32	387.32	387.32
SURFACE LOAD	PEDESTRIAN	PEDESTRIAN	PEDESTRIAN
FRAME & COVER	22A H20	30A 30" X 48"	H20
RETAINAGE VOLUME (CF)			0.68
ORIFICE SIZE (DIA. INCHES)			ø0.39 DIA

NOTES: PRELIMINARY NOT FOR CONSTRUCTION, UNIT PENDING FINAL STRUCTURAL REVIEW – DIMENSIONS ARE WRK.

INSTALLATION NOTES

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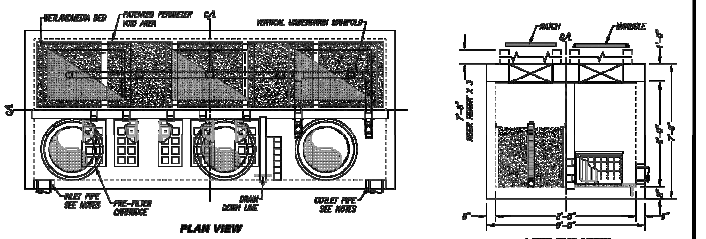

TREATMENT FLOW (CFS)	0.260
OPERATING HEAD (FT)	3.4
PRETREATMENT LOADING RATE (GPM/SF)	2.0
WETLAND MEDIA LOADING RATE (GPM/SF)	0.09

PREPARED AND COPYRIGHTED:

MWS-L-8-20-6'-0"-V-UG
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

SITE SPECIFIC DATA

PROJECT NUMBER	11699
PROJECT NAME	MERGE 56 PHASE 2
PROJECT LOCATION	SAN DIEGO, CA
STRUCTURE ID	BF-3-15-3
TREATMENT REQUIRED	
VOLUME BASED (CF)	FLOW BASED (CFS)
N/A	0.260
TREATMENT HGL AVAILABLE (FT)	3.4
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE	OFFLINE

PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	373.33	PVC	8"
INLET PIPE 2	N/A	N/A	N/A
OUTLET PIPE	376.70	PVC	8"
	PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	387.97	387.97	387.97
SURFACE LOAD	PEDESTRIAN	PEDESTRIAN	PEDESTRIAN
FRAME & COVER	22A H20	30A 30" X 48"	H20
RETAINAGE VOLUME (CF)			0.68
ORIFICE SIZE (DIA. INCHES)			ø0.39 DIA

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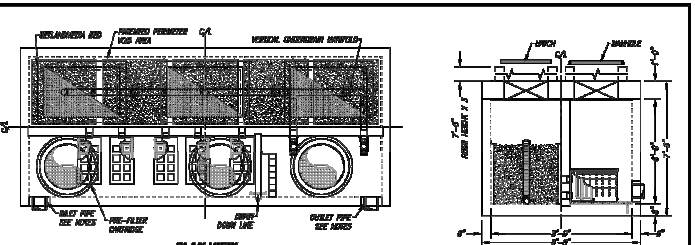

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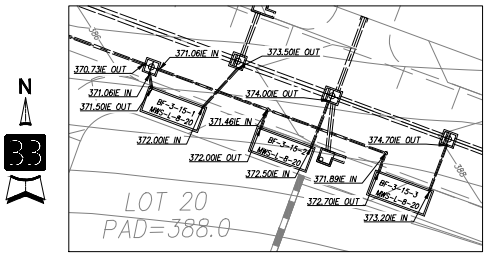
MWS-L-8-20-6'-0"-V-UG
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL



DETAIL: BF-3-15

SCALE: 1"=20'

DIG ALERT 811

IMPORTANT NOTICE

CAUTION!!!
CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS AND POINTS OF CONNECTION FOR POTENTIAL CONFLICT PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF WORK SUFFICIENTLY IN ADVANCE TO PERMIT POTENTIAL MODIFICATION PLANS.

BIO CLEAN ENGINEER'S STATEMENT

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COREY LEE HAEDER
R.C.E. 88728

DATE REGISTRATION EXPIRES: 03/31/2020

PRIVATE CONTRACT

BIOCLEAN DETAILS FOR:

MERGE 56 - UNIT 2

LOTS 1-89 and "A"-"T" OF MAP _____

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 43 OF 47 SHEETS

PROJECT NO. 599996

V.T.M. 1266780

FOR CITY ENGINEER _____ DATE _____

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	LAT33			
AS-BUILTS				

1926-6283
NAD83 COORDINATES

286-1723
LAMBERT COORDINATES

CONTRACTOR _____ DATE STARTED _____
INSPECTOR _____ DATE COMPLETED _____

40553-43-D

NEW SHEET

SITE SPECIFIC DATA		
PROJECT NUMBER	11886	
PROJECT NAME	MERGE 56 PHASE 2	
PROJECT LOCATION	SAN DIEGO, CA	
STRUCTURE ID	BF-3-16-1	
TREATMENT REQUIRED		
VOLUME BASED (CF)	FLOW BASED (CFS)	
N/A	0.540	
TREATMENT HGL AVAILABLE (FT)		3.4
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE		OFFLINE
PIPE DATA	I.E.	MATERIAL / DIAMETER
INLET PIPE 1	379.19	PVC / 8"
INLET PIPE 2	N/A	N/A / N/A
OUTLET PIPE	378.90	PVC / 8"
	PRETREATMENT	BIORETENTION / DISCHARGE
RIM ELEVATION	388.91	388.91 / 388.91
SURFACE LOAD	PEDESTRIAN	PEDESTRIAN / PEDESTRIAN
FRAME & COVER	22A H20	30A 36" X 48" / H20
RETAINAGE VOLUME (CF)		0.96
ORIFICE SIZE (DIA. INCHES)		0.94 DIA

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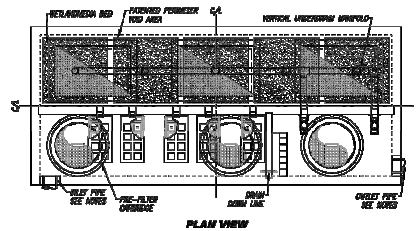
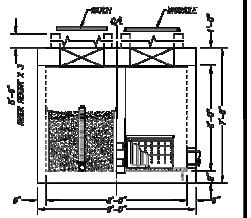
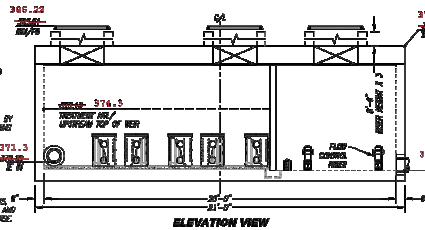


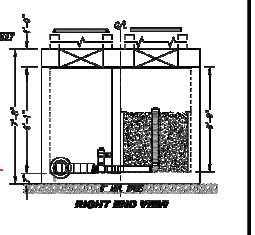
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



RIGHT END VIEW

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TREATMENT FLOW (CFS)	0.595
GROWING MEDIA (FT)	3.4
PRETREATMENT LOADING RATE (GPM/SF)	1.9
WETLAND MEDIA LOADING RATE (GPM/SF)	0.83

PRETREATMENT AND CONTAINMENT:

MWS-L-8-20-6'-0"-V-UG
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

SITE SPECIFIC DATA		
PROJECT NUMBER	11886	
PROJECT NAME	MERGE 56 PHASE 2	
PROJECT LOCATION	SAN DIEGO, CA	
STRUCTURE ID	BF-3-16-2	
TREATMENT REQUIRED		
VOLUME BASED (CF)	FLOW BASED (CFS)	
N/A	0.595	
TREATMENT HGL AVAILABLE (FT)		3.4
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE		OFFLINE
PIPE DATA	I.E.	MATERIAL / DIAMETER
INLET PIPE 1	378.69	PVC / 8"
INLET PIPE 2	N/A	N/A / N/A
OUTLET PIPE	378.19	PVC / 8"
	PRETREATMENT	BIORETENTION / DISCHARGE
RIM ELEVATION	394.94	389.94 / 394.94
SURFACE LOAD	PEDESTRIAN	PEDESTRIAN / PEDESTRIAN
FRAME & COVER	22A H20	30A 36" X 48" / H20
RETAINAGE VOLUME (CF)		0.98
ORIFICE SIZE (DIA. INCHES)		0.94 DIA

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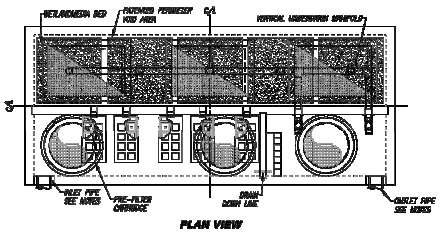
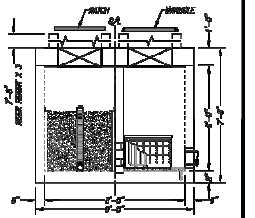
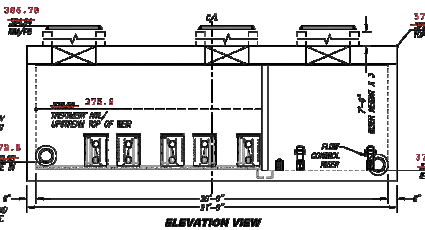


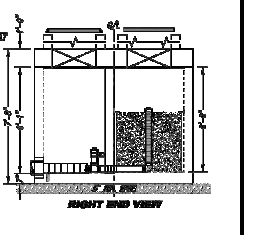
PLAN VIEW



LEFT END VIEW



ELEVATION VIEW



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GROWING MEDIA (FT)	3.4
PRETREATMENT LOADING RATE (GPM/SF)	1.9
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PRETREATMENT AND CONTAINMENT:

MWS-L-8-20-6'-0"-V-UG
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

SITE SPECIFIC DATA		
PROJECT NUMBER	11886	
PROJECT NAME	MERGE 56 PHASE 2	
PROJECT LOCATION	SAN DIEGO, CA	
STRUCTURE ID	BF-3-16-3	
TREATMENT REQUIRED		
VOLUME BASED (CF)	FLOW BASED (CFS)	
N/A	0.940	
TREATMENT HGL AVAILABLE (FT)		3.4
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE		OFFLINE
PIPE DATA	I.E.	MATERIAL / DIAMETER
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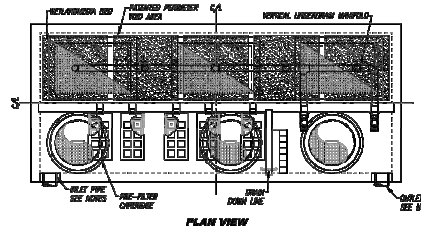
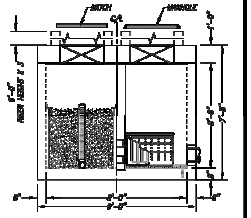


PLAN VIEW



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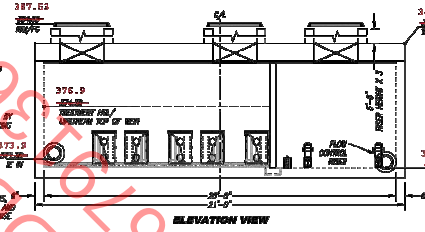

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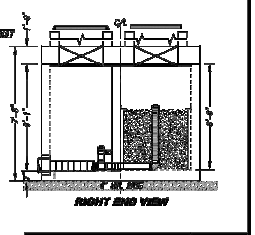

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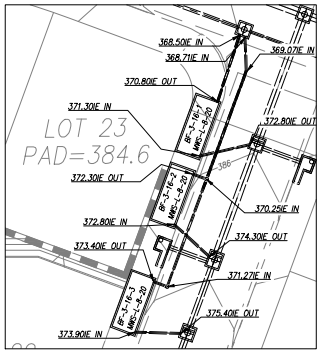
MWS-L-8-20-6'-0"-V-UG
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL



DETAIL: BF-3-16
SCALE: 1"=20'

DIG ALERT 811

IMPORTANT NOTICE
Section 4216 of the Government Code requires that a Dig Alert Identification Number be issued before a "Permit to Excavate" will be valid. For your protection call DIG ALERT for underground facilities marked. TOLL FREE 1-800-422-4133
Two working days before you dig.

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R.C.E. 88728

DATE REGISTRATION EXPIRES: 03/31/2020

PRIVATE CONTRACT

BIOCLEAN DETAILS FOR:

MERGE 56 - UNIT 2

LOTS 1-89 and "A"-"T" OF MAP _____

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 44 OF 47 SHEETS

PROJECT NO. 599996

V.T.M. 1266780

FOR CITY ENGINEER _____ DATE _____

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	LAT33			
AS-BUILTS				

1926-6283
NAD83 COORDINATES

286-1723
LAMBERT COORDINATES

CONTRACTOR _____ DATE STARTED _____
INSPECTOR _____ DATE COMPLETED _____

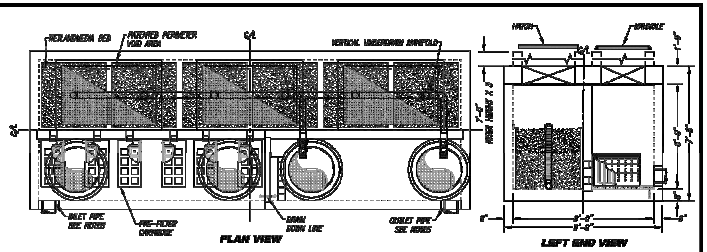
40553- 44-D

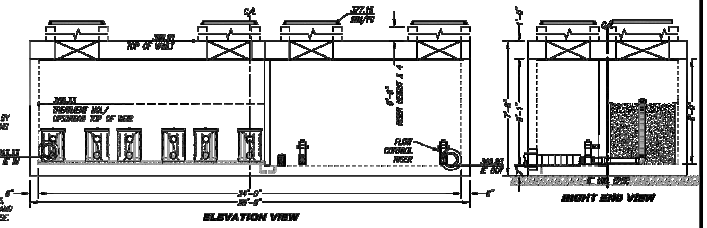
H:\1100\1176.30 MERGE 56\ENGINEERING\PLANS\GRADING\CONSTRUCTION CHANGE\CC'A' (UNIT 2) – PTS 67913.2\1176.3 GRD ON UNIT2-SHT 44 POST CON DETAILS 2.DWG 2/19/2021 9:18 AM

NEW SHEET

SITE SPECIFIC DATA		
PROJECT NUMBER	11765	
PROJECT NAME	MERGE 56 PHASE 2	
PROJECT LOCATION	SAN DIEGO, CA	
STRUCTURE ID	BF-3-17-1	
TREATMENT REQUIRED		
VOLUME BASED (CF)	FLOW BASED (CFS)	
N/A	0.850	
TREATMENT HGL AVAILABLE (FT)		3.4
PEAK BYPASS REQUIRED (CFS) – IF APPLICABLE		OFFLINE
PIPE DATA	I.E.	MATERIAL / DIAMETER
INLET PIPE 1	369.33	PVC / 8"
INLET PIPE 2	N/A	N/A
OUTLET PIPE	368.83	PVC / 8"
	FRAME&COVER	GRATE/MANHOLE
RIM ELEVATION	377.16	377.16
SURFACE LOAD	PEDESTRIAN	PEDESTRIAN
FRAME & COVER	22" ø26"	36" x 36" / ø36"
TREATMENT VOLUME (CF)		1,053
ENERGY GRADE (DHL BUDGET)		30.00 FT

PHASE PRELIMINARY NOT FOR CONSTRUCTION





INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS' SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
2. UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
4. CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. EFFECT CANNOT REDUCE DESIGN FLOWS. INVERT OF OVERFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATERTIGHT PER MANUFACTURER'S SUPPLIED CONNECTION DETAIL.
5. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL PIPES, HOSES, ANCHORS, AND WASHERS. CONTRACTOR TO DRILL ALL MANHOLES AND ENTRIES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
6. VEGETATION SUPPLIED AND INSTALLED BY OTHERS. ALL LARGE MOI VEGETATION MUST HAVE LEFT ON SPENT ROOTBALL SUPPLIED AND INSTALLED BY OTHERS.
7. CONTRACTOR RESPONSIBLE FOR CONTACTING BIO CLEAN FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A BIO CLEAN REPRESENTATIVE.

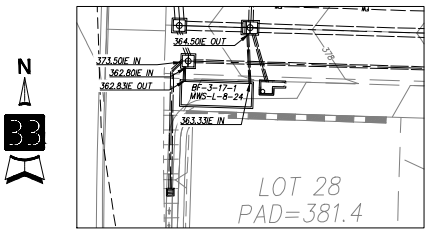
GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, RECEPTACLES AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS REVISIONS EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT BIO CLEAN.

PEAK FLOW (CFS)	5.695
OPERATING HEAD (FT)	3.4
PRETREATMENT LOADING RATE (GPM/SF)	2.0
VEGETATED MEDIA LOADING RATE (GPM/SF)	1.0

PROPRIETARY AND CONFIDENTIAL:

MWS-L-8-24-6'-0"-V-UG
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL



DETAIL: BF-3-17-1

SCALE: 1"=20'

DIG ALERT 811

IMPORTANT NOTICE

CAUTION!!!
CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS AND POINTS OF CONNECTION FOR POTENTIAL CONFLICT PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF WORK SUFFICIENTLY IN ADVANCE TO PERMIT POTENTIAL MODIFICATION PLANS.

BIO CLEAN ENGINEER'S STATEMENT

THE MANUFACTURER'S DETAILS AND CUT SHEETS INCLUDED HEREON HAVE BEEN DESIGNED BY BIO CLEAN ENVIRONMENTAL SERVICES, INC. BASED UPON DESIGN INFORMATION PROVIDED BY LATITUDE 33 PLANNING AND ENGINEERING. BIO CLEAN ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE REQUIRED 'WATER QUALITY FLOW RATES' PROVIDED HEREON. THE ENGINEER'S STAMP ON THIS DRAWING IS MEANT TO ASSURE THAT THE DEVICES SHOWN ARE MECHANICALLY COMPETENT AND WILL PERFORM TO THE EXTENT DETAILED HEREON PROVIDED THAT THE PROPER OPERATIONS AND MAINTENANCE PROCEDURES ARE FOLLOWED TO PRESERVE THE DEVICE'S FUNCTIONALITY. IT IS THE RESPONSIBILITY OF THE OWNER TO PROVIDE ONGOING MAINTENANCE INTO PERPETUITY AS OUTLINED IN THE 'STORM WATER MANAGEMENT AND DISCHARGE CONTROL MAINTENANCE AGREEMENT APPROVAL #2255201'. REVISIONS TO THE DETAILS MAY BE REQUIRED IF SOIL CONDITIONS ON SITE ARE FOUND TO BE DIFFERENT FROM WHAT IS REPORTED IN THE GEOTECHNICAL INVESTIGATION.

COREY LEE HAEDER
R.C.E. 88728

DATE REGISTRATION EXPIRES: 03/31/2020

PRIVATE CONTRACT

BIOCLEAN DETAILS FOR:

MERGE 56 - UNIT 2

LOTS 1-89 and "A"-"T" OF MAP _____

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 44 OF 47 SHEETS

PROJECT NO. 599996

FOR CITY ENGINEER _____ DATE _____

V.T.M. 1266780

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	LAT33			
AS-BUILTS				

1926-6283
NAD83 COORDINATES

286-1723
LAMBERT COORDINATES

CONTRACTOR _____ DATE STARTED _____
INSPECTOR _____ DATE COMPLETED _____

40553-44-D

NEW SHEET

Attachment 5
Drainage Report

Attach project's drainage report. Refer to Drainage Design Manual to determine the reporting requirements.

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April 19, 2021

San Diego Developmental
Services Department
101 Ash St, San Diego, CA 92101

SUBJECT: **MERGE 56 UNIT 1 & Unit 2 CONSTRUCTION CHANGE "A", PTS 679136 & 679132**
ADDENDUM DRAINAGE REPORT

The letter is to address the proposed changes in the Merge 56 Unit 2 Construction Change "A", PTS 679132 (Construction Change to PTS 599996) Drainage assessment, and in the Merge 56 Unit 1 Construction Change "A", PTS 679136 (Construction Change to PTS 596359) Drainage assessment.

Note: Please refer to the attached Proposed Drainage Map for the Drainage Management Areas mentioned below.

PROPOSED PROJECT DESCRIPTION

This application proposes enacting changes to site grading and design across both Merge 56 Unit 1 and Merge 56 Unit 2 (for greater detail on these changes, please see respective PTS submittal.) These changes for Unit 1 include, but are not limited to: the shifting and realignment of the onsite StormTrap storage vault and the shift of the BMP 12 biofiltration basin. These changes for Unit 2 include, but are not limited to: shifting the street alignment of Merge 56 Private Drive N further South, significantly redesigning the street alignment of Merge 56 Private Drive "Q" and Private Drive "P", and reworking lot and building design within the entirety of Unit 2, as well as adjusting Drainage Management Area design and storm drain design.

PROJECT SITE DRAINAGE

Previously Approved Conditions: Drainage from all lots within the Unit 2 area was parsed into 11 DMAs, managed by 6 BMP Biofiltration basins (BMP 14, 16-20), and 5 Modular Wetlands System units (BMP 3, 6, 7, 10, 11) for street treatment. Drainage from all lots within the Unit 1 area was parsed into 13 DMAs, managed by 4 BMP Biofiltration Basins (BMP 12-15), and 9 Modular Wetlands System units (BMP 1-6, 8-10) for street treatment.

Outflow was primarily conveyed through the backbone storm drain systems within Private Drive M (now Merge Avenue per Street Naming approval) and Private Drive N. Drainage from this system travels north and west and confluence with the drainage systems within Camino Del Sur and ultimately discharges to the west into Deer Canyon, identified as POC 1.

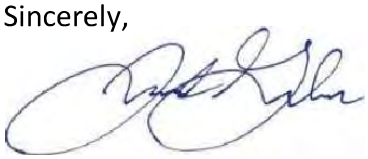
Proposed Conditions: The proposed construction changes have been designed to maintain overall drainage patterns of the previously approved report, but with a greater emphasis on Modular Wetland System usage in Unit 2. The Unit 2 site is now subdivided into 26 drainage basins, with 7 receiving Modular Wetland System treatment devices (BMP 3-15, 3-16, 3-17). Drainage from this system still travels north and west and confluences with the drainage systems within Camino Del Sur and ultimately discharges to the west into Deer Canyon, identified as POC 1. The Unit 1 drainage patterns remain the same.

Runoff generated from the site will not result in any unmitigated drainage, or storm water quality impacts on the existing downstream conditions with these proposed measures in place.

Note: Updated drainage calculations have been provided in this addendum study.

If you have any questions or need any further information please feel free to call me on my direct line (858-875-1718) or email me at Justin.Giles@latitude33.com.

Sincerely,



Justin R. Giles, C83540
Project Manager
Latitude 33 Planning and Engineering

2021

MEGE 56 SWQMP
CC'A' ADDENDUM
PTS 679136 &679132

DRAINAGE STUDY – ADDENDUM CC 'A'
ONSITE MERGE 56 UNITS 1 & 2

Unit 1 CC'A': PTS# 679136, DWG 40552-D
Unit 2 CC'A': PTS# 679132, DWG 40553-D

APRIL 2021

PREPARED BY: LATITUDE 33 PLANNING & ENGINEERING
PREPARED FOR: SEABREEZE PROPERTIES, LLC
JOB NUMBER: 1176.3

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DRAINAGE STUDY FOR:

ONSITE MERGE 56
UNITS 1 & 2

CITY OF SAN DIEGO, CALIFORNIA

Unit 1:		Unit 2:	
PTS NO.	679136	PTS NO.	679132
DWG. NO.	40552-D	DWG. NO.	40553-D

February 19, 2021

Prepared for:
SEA BREEZE PROPERTIES, LLC
5550 Carmel Mountain Road, Suite 204
San Diego, CA 92130

Prepared by:
Latitude 33 Planning and Engineering
9968 Hibert Street, 2nd Floor
San Diego, California 92131
(858) 751-0633

Matthew J. Semic RCE 71075
Registration Expires 06/30/21

Prepared by: HRG
Checked by: JRG

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TABLE OF CONTENTS

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DECLARATION OF RESPONSIBLE CHARGE

I HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THIS PROJECT, THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THE PROJECT AS DEFINED IN SECTION 6703 OF THE BUSINESS AND PROFESSIONS CODE, AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS.

I UNDERSTAND THAT THE CHECK OF PROJECT DRAWINGS AND SPECIFICATIONS BY THE CITY AND COUNTY OF SAN DIEGO IS CONFINED TO A REVIEW ONLY AND DOES NOT RELIEVE ME, AS ENGINEER OF WORK, OF MY RESPONSIBILITIES FOR PROJECT DESIGN.

Matthew J. Semic R.C.E. 71075 DATE
REGISTERED CIVIL ENGINEER

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I. PURPOSE

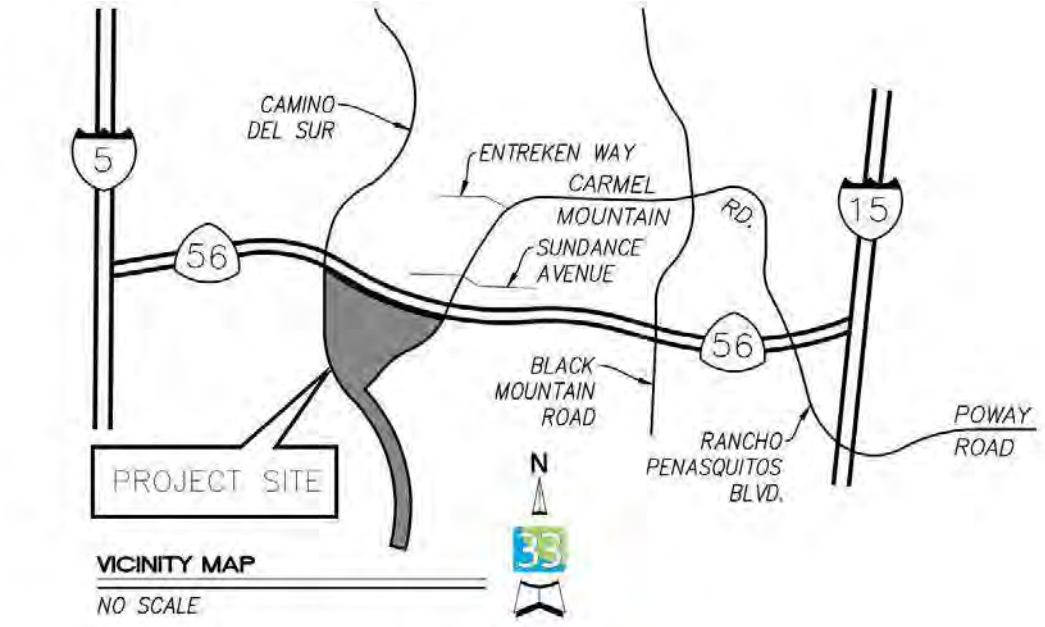
This drainage study evaluates the pre-project and post-project drainage conditions for anticipated runoff flows associated with the construction of the Merge Onsite development (approved per VTM 1266780) using the rational method outlined in the City of San Diego Drainage Design Manual. This report documents the hydrologic and hydraulic impacts due to the development.

II. PROJECT DESCRIPTION

The proposed Onsite Merge 56 project is approximately 36.10 acres, located in the City of San Diego immediately south of state route 56 (see Figure 1 – Vicinity Map). Currently, Camino Del Sur terminates approximately one mile south of SR-56. The Offsite Merge 56 Grading and Improvement Plans (DWG 45089-D & 40590-D) propose to connect the northerly segment of Camino Del Sur from Torrey Santa Fe Road to the southerly segment near Dormouse Road. The offsite project will also extend Carmel Mountain Road southwesterly to the proposed Camino Del Sur extension.

These road extensions are also accompanied by the Onsite Merge 56 project which this report will focus on. The onsite project will be a development bounded by SR-56 to the north, Camino Del Sur to the west and Carmel Mountain Road to the east. The proposed use of this space includes a mix of single family residential, multi-family residential, and mixed-use office/retail space.

FIGURE 1 – VICINITY MAP



III. EXISTING DRAINAGE PATTERNS

In pre-project conditions, the site is made up of undeveloped, naturally vegetated land. The project is located primarily within the watershed limits for Los Penasquitos Canyon Preserve. An existing ridgeline

approximately 800 feet southeast of the proposed Camino Del Sur and Carmel Mountain Road intersection divides the project's drainage into the Deer Canyon and the Penasquitos Canyon. The northern portion of the project drains northwesterly towards Deer Canyon, with the remaining portions of the site draining southeasterly towards Penasquitos Canyon. For analysis, a runoff coefficient of 0.45 is used for the existing site which corresponds to rural lots greater than ½ acre per City of San Diego Drainage Design Manual 2017.

Clean Water Act Section 401 & 404 Applicability

Per the approved PDP No. 1266871 conditions, the project is subject to the requirements of CWA 401/404. The CWA 401/404 approvals will be obtained prior to start of construction.

IV. PROPOSED DRAINAGE PATTERNS

The post-project area will generally maintain the pre-project drainage patterns. Most of the runoff will be collected via proposed storm drain systems that will be installed as part of the street improvements. Refer to the attached "Proposed Onsite Merge 56 Drainage Map" for information regarding proposed drainage areas and the point of compliance (POC 'A').

Runoff from all private driveways (DMAs 1-9) will be routed via sheet flow to modular wetlands units before entering the private storm drain system. Bypass of the modular wetlands units will be via combination gutter bypass and internal bypass within the modular wetland units. Runoff generated by the pad graded areas north of Merge Avenue (DMAs 12-14), commercial and residential, will be routed to bio-filtration basins before entering the private storm drain system. Runoff from all remaining pad graded areas and private driveways south of Merge Avenue (DMAs 10-38) will be routed via storm drain to modular wetlands units. Bypass of the modular wetlands units will be via weirs installed within storm drain cleanouts.

All runoff will be piped towards the northwest corner of the project to a storage vault system which will provide detention for hydromodification requirements as well as mitigation of increased runoff generated by the developed site. The storage vault system will be equipped with an internal weir which will allow higher volume flows to bypass internally. Runoff is ultimately conveyed via private storm drain to Camino Del Sur where it will connect into the public storm drain system at POC 'A' which then drains westerly towards Deer Canyon.

Prior drainage analyses have been performed for the entire Merge 56 project (onsite and offsite) and are included in the following reports:

- January 2001, *Drainage Study for Camino Ruiz* (aka Camino Del Sur), *South of Carmel Mountain Road*
- January 22, 2004, *Preliminary Drainage Study, Rhodes Crossing*
- August 28, 2006, *Drainage Study, Rhodes Crossing, Camino del Sur & Camel Mountain Roadway Plans.*
- May 12, 2015, *Drainage Report for Merge 56 Vesting Tentative Map,* performed by Chang Consultants.36

The drainage report for the Vesting Tentative Map of the Merge 56 onsite and offsite project entitled *Drainage Report for Merge 56 Vesting Tentative Map* has been provided ion Appendix A and further support the findings of this report.

V. CALCULATIONS SUMMARY

Using Storm and Sanitary Analysis (results provided in Appendix B & C) the following 50-year values were determined for the existing and proposed condition. These values are further detailed on the Existing and Proposed Drainage Maps found in Appendix B & C respectively.

Table 1 - Summary of Existing Condition DMA Flows

Existing DMA Summary		
DMA ID	Area (acres)	Peak Runoff (cfs)
1	13.92	14.08
2	22.18	27.35

Table 2 - Summary of Proposed Condition DMA Flows

Proposed DMA Summary		
DMA ID	Area (ac)	Peak Runoff (cfs)
1	0.45	1.49
2	1.34	4.13
3	0.56	1.28
4	1.55	3.39
5	0.30	0.92
6	1.27	2.50
7	0.18	0.45
8	0.42	1.47
9	0.39	1.88
10	0.20	1.18
11	0.46	0.77
12	4.14	14.41
13	5.52	17.93
14	2.80	9.76
15	1.35	4.70
16	0.67	2.33
17	0.39	1.36
18	0.41	1.43
19	0.45	1.57

Proposed DMA Summary		
DMA ID	Area (ac)	Peak Runoff (cfs)
20	0.33	1.15
21	0.42	1.46
22	0.56	1.95
23	0.59	2.06
24	0.80	2.79
25	0.40	1.39
26	0.51	1.46
27	0.42	1.21
28	0.84	2.41
29	1.26	3.62
30	1.35	3.78
31	2.64	6.97
32	0.73	2.10
33	0.66	1.89
34	0.74	2.12
35	0.86	2.47
36	0.66	1.89
37	0.10	0.35
38	0.34	0.49

Table 3 - Summary of Existing Outfall Flow

Existing Conditions POC Summary		
POC ID	**Contributing DMAs**	**Q50 Peak (cfs)**
POC 'A'	1, 2	41.43

Table 4 - Summary of Proposed Outfall Flow

Proposed Conditions POC Summary				
POC ID	**Contributing DMAs**	**Existing Q50 Peak (cfs)**	**Proposed Q50 Peak (cfs) Before Detention**	**Proposed Q50 Peak (cfs) After Detenetion**
POC 'A'	1-20	*41.43*	105.19	**17.57**

VI. CONCLUSION

The hydraulic analysis performed for the Onsite Merge 56 project provides evidence to support that the drainage design proposed is feasible. An increase in Peak Q_{50} of **63.76cfs** will be mitigated by the implementation of storage vaults. The project currently proposes 84,075cf of storage to meet hydro modification requirements. By modeling a storage vault in Storm and Sanitary Analysis, the proposed peak runoff after detention is **Q_{50} = 17.57cfs**. As this is less than the existing peak runoff (*Q_{50} = 41.43fs*), the increase in peak flow will be mitigated and the rational method analysis which was used to determine the peak 50-year values shows that the proposed private storm drain system is sized appropriately and can properly convey the project generated runoff.com

For specific sizes and other details on the proposed flow control BMP's, see the Storm Water Quality Management Plan for Onsite Merge 56 prepared by Latitude 33 Planning & Engineering.

APPENDIX A: REFERENCES

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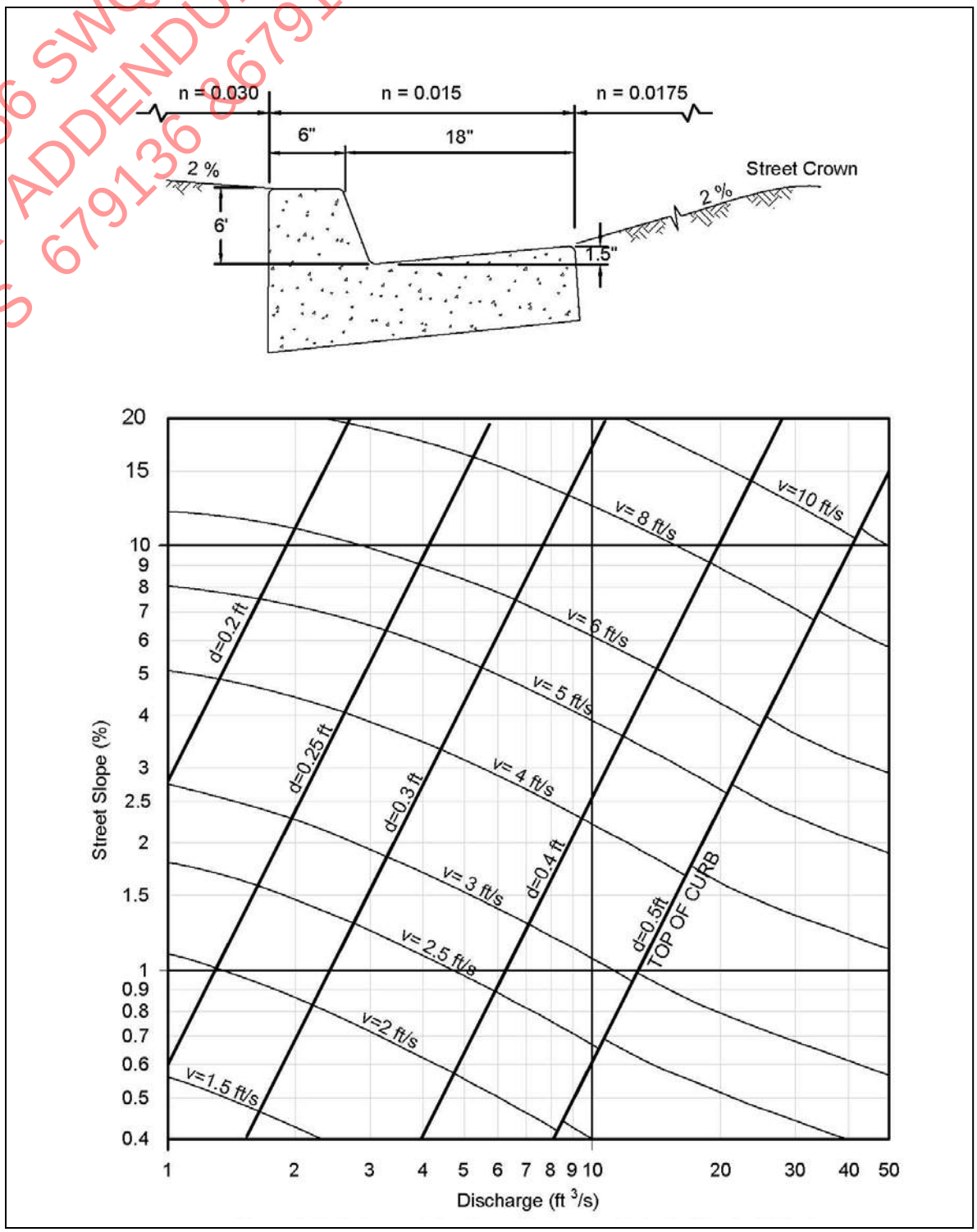

Figure 3-2: Gutter and Roadway Discharge-Velocity Chart (6" Curb)

3.2.2 Inlet Design

3.2.2.1 Curb Inlets on Grade

Full Interception

The capacity of a curb inlet on continuous grade depends on gutter slope, depth of flow in the gutter, the dimensions of the curb opening, and the amount of depression at the catch basin. Equation 3–2 describes the capacity of a curb inlet assuming full (100 %) interception.

Equation 3-2. Capacity of Curb Inlet

$$\frac{Q}{L_T} = 0.7\ (a+y)^{3/2}$$

where:

Q	=	interception capacity of the curb inlet (ft^3/s)
y	=	depth of flow approaching the curb inlet (ft; maximum of y = 0.4)
a	=	depth of depression of curb at inlet (ft; use a=0.33)
L_T	=	length of clear opening of inlet for total interception (ft)

Figure 3–4 illustrates the relationship between interception capacity, depth of approaching flow, and curb inlet depression, and may be used to determine curb inlet interception capacity.

Table A-1. Runoff Coefficients for Rational Method

Land Use	Runoff Coefficient (C)
	Soil Type [1]
Residential:	
Single Family	0.55
Multi-Units	0.70
Mobile Homes	0.65
Rural (lots greater than ½ acre)	0.45
Commercial [2]	
80% Impervious	0.85
Industrial [2]	
90% Impervious	0.95

Note:
[1] Type D soil to be used for all areas.
[2] Where actual conditions deviate significantly from the tabulated imperviousness values of 80% or 90%, the values given for coefficient C, may be revised by multiplying 80% or 90% by the ratio of actual imperviousness to the tabulated imperviousness. However, in case shall the final coefficient be less than 0.50. For example: Consider commercial property on D soil.

Actual imperviousness = 50%
Tabulated imperviousness = 80%
Revised C = (50/80) x 0.85 = 0.53

The values in Table A–1 are typical for urban areas. However, if the basin contains rural or agricultural land use, parks, golf courses, or other types of nonurban land use that are expected to be permanent, the appropriate value should be selected based upon the soil and cover and approved by the City.

A.1.3. Rainfall Intensity

The rainfall intensity (I) is the rainfall in inches per hour (in/hr.) for a duration equal to the T_c for a selected storm frequency. Once a particular storm frequency has been selected for design and a T_c calculated for the drainage area, the rainfall intensity can be determined from the Intensity-Duration-Frequency Design Chart (Figure A-1).

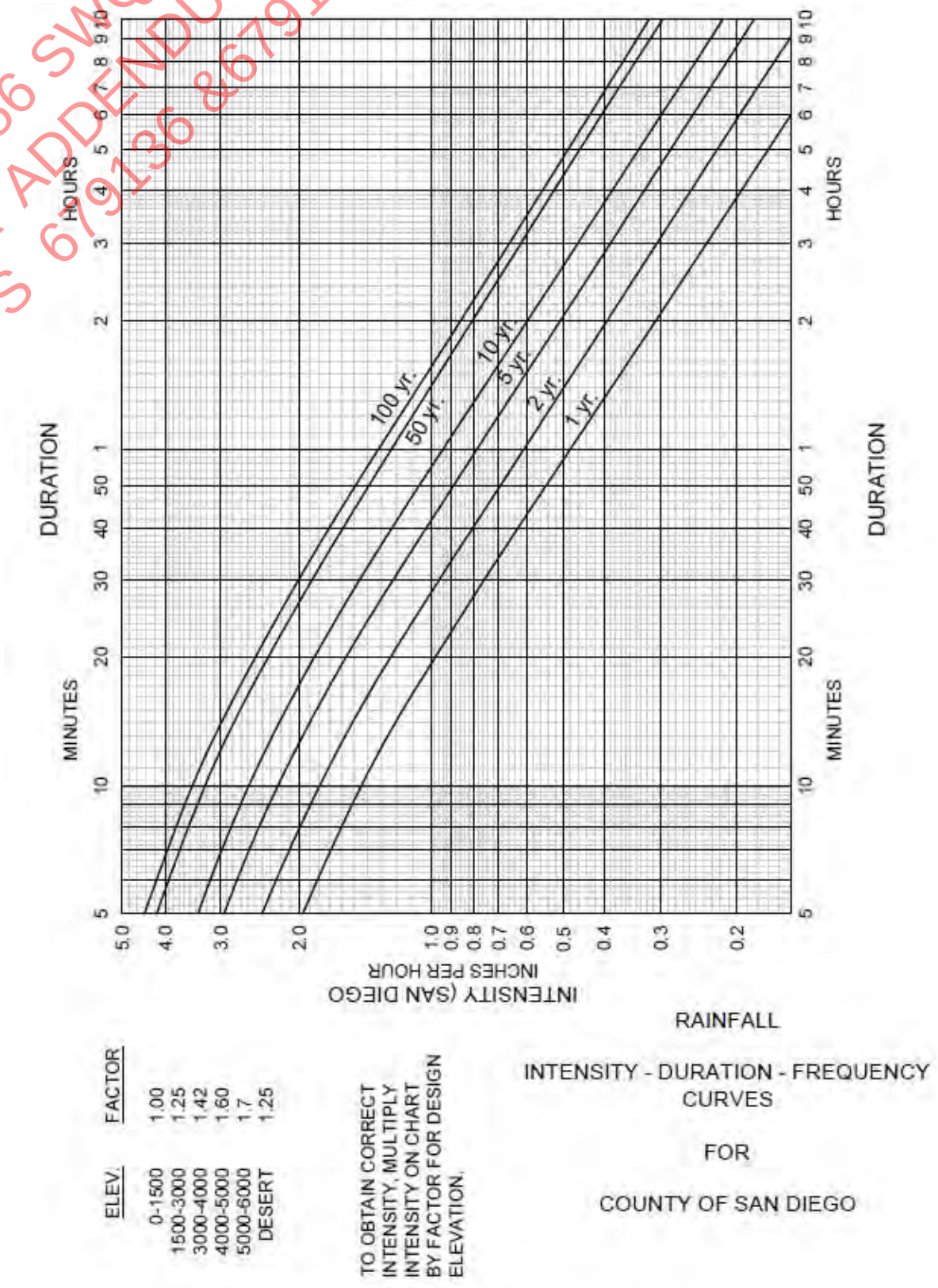

Figure A-1. Intensity-Duration-Frequency Design Chart

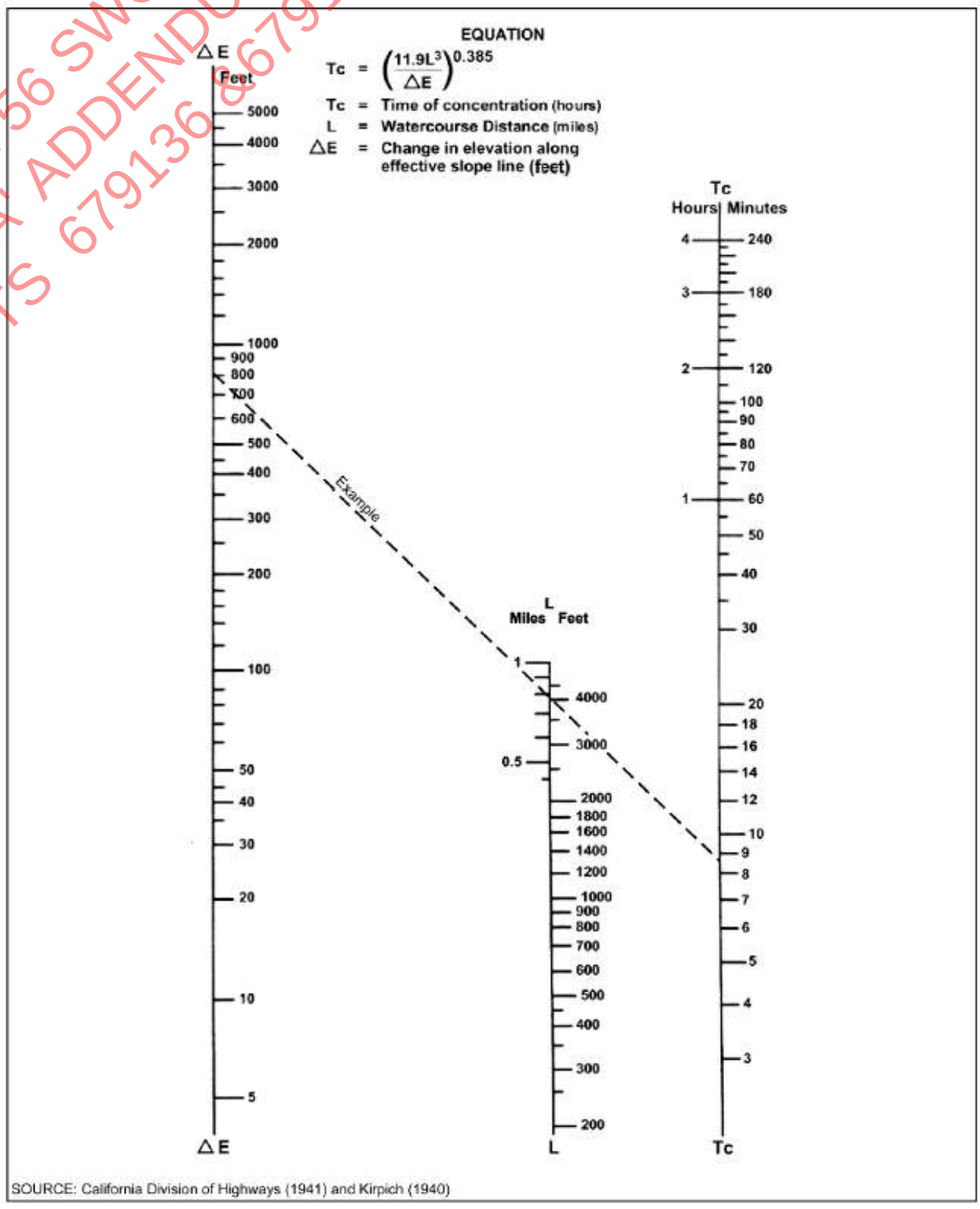

Figure A-2. Nomograph for Determination of T_c for Natural Watersheds

Note: Add ten minutes to the computed time of concentration from Figure A-2.

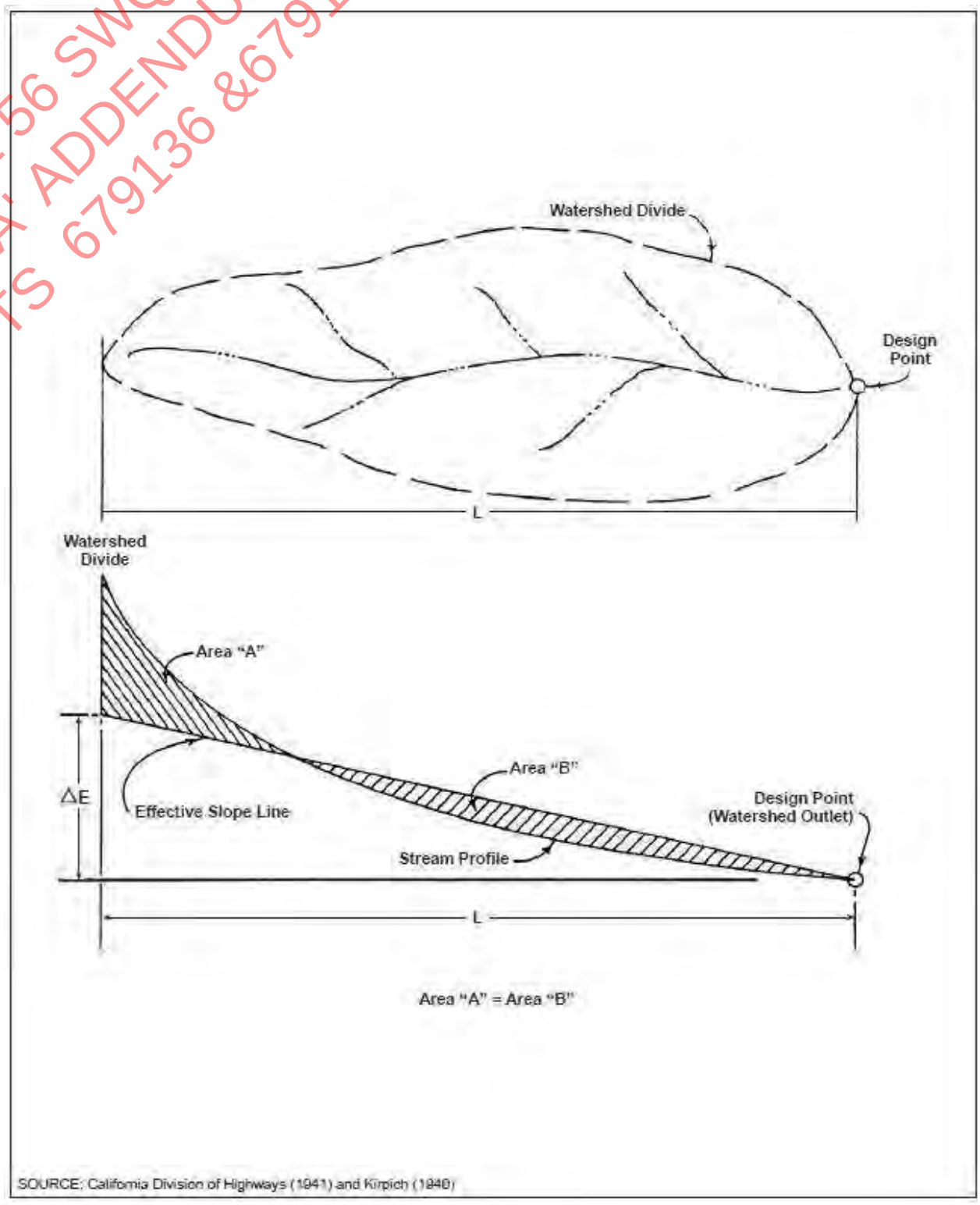

Figure A-3. Computation of Effective Slope for Natural Watersheds

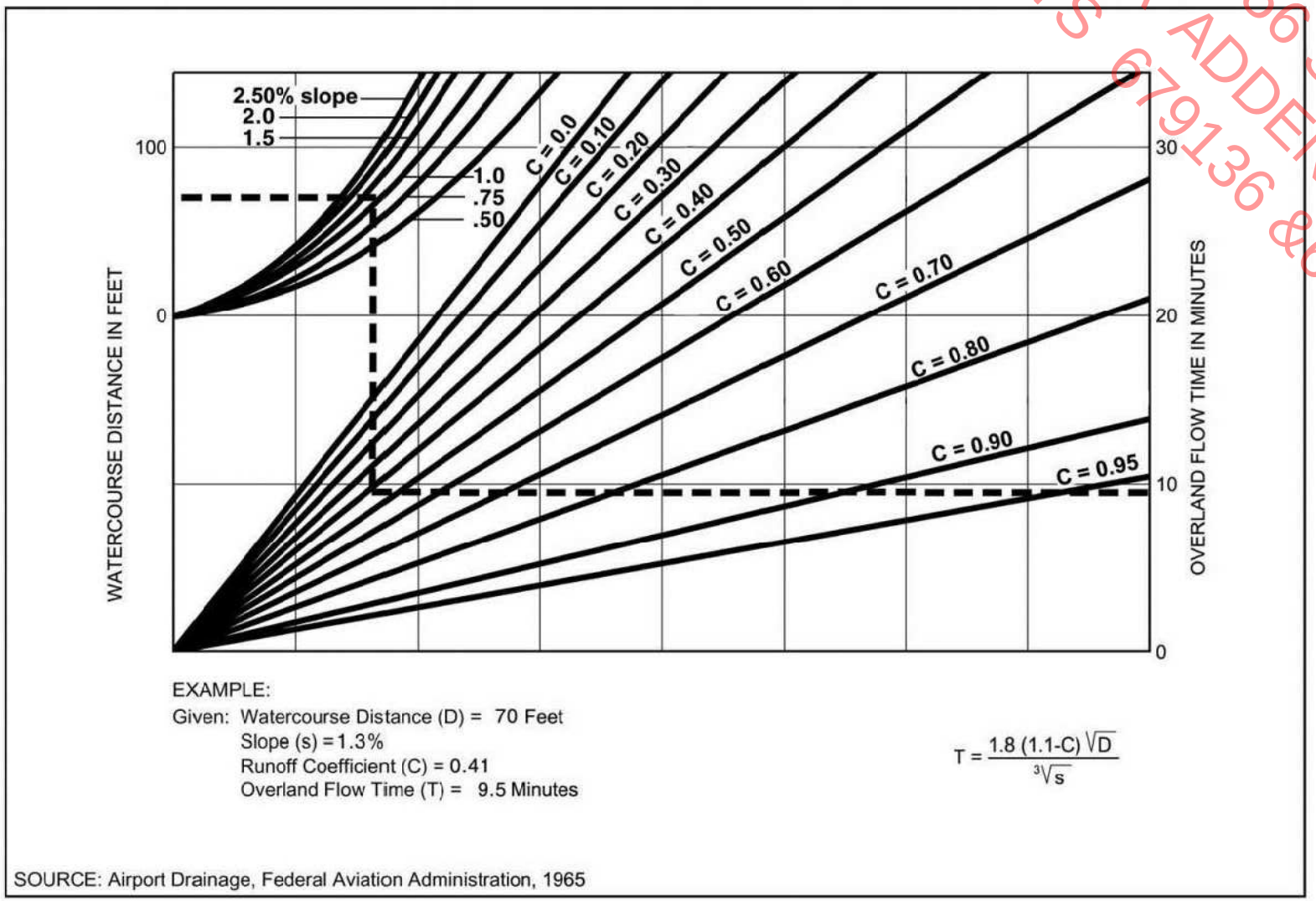

Figure A-4. Rational Formula – Overland Time of Flow Nomograph

Note: Use formula for watercourse distances in excess of 100 feet.

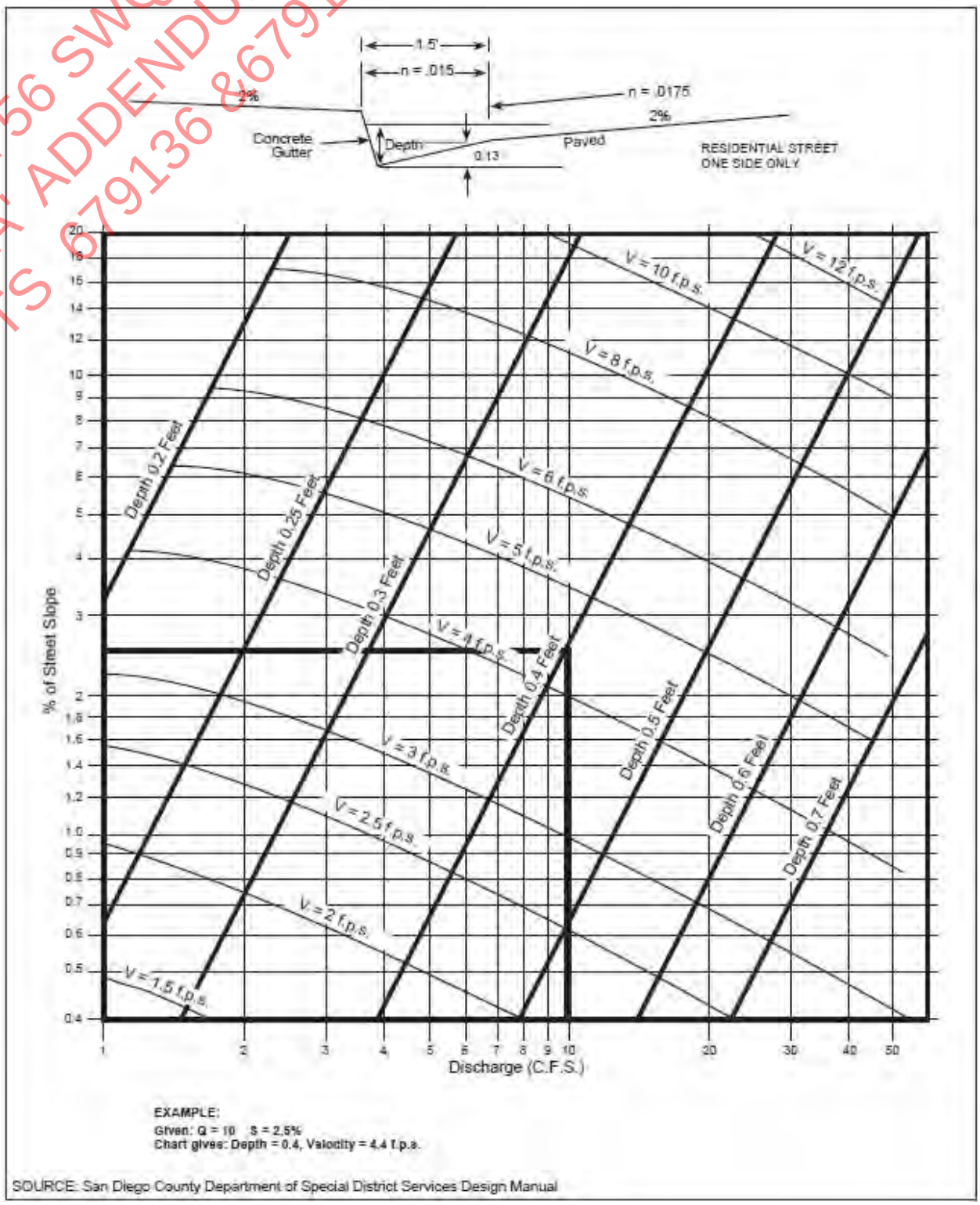

Figure A-5. Gutter and Roadway Discharge – Velocity Chart

APPENDIX B: EXISTING CALCULATIONS & EXHIBIT

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Autodesk® Storm and Sanitary Analysis 2016 - Version 12.0.42 (Build 0)

****
Project Description
****
File Name ..... Merge Onsite Existing Hydrology.SPF
Description ..... H:\1100\1176.30 Merge 56\Engineering\Reports\Drainage\SSA\Exinsting Parcels.dwg

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. Rational
Time of Concentration..... SCS TR-55
Return Period..... 50 years
Storage Node Exfiltration.. None
Starting Date MAY-23-2018 00:00:00
Ending Date MAY-24-2018 00:00:00
Report Time Step 00:00:10

****
Element Count
****
Number of subbasins 2
Number of nodes 1
Number of links 0

****
Subbasin Summary
****

Subbasin ID	Total Area acres
{Site 1}._E1	13.93
{Site 1}._E2	22.18

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Out-POC'A'	OUTFALL	298.00	298.00	0.00	

********** Runoff Quantity Continuity **********	Volume acre-ft	Depth inches
Total Precipitation	2.122	0.705
Continuity Error (%)	0.554	

********** Flow Routing Continuity **********	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	0.947	0.309
Initial Stored Volume	0.000	0.000

Final Stored Volume	0.000	0.000
Continuity Error (%)	0.000	

****
Runoff Coefficient Computations Report
****

Subbasin {Site 1}._E1

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	27.07	D	0.45
Composite Area & Weighted Runoff Coeff.	27.07		0.45

Subbasin {Site 1}._E2

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	35.96	D	0.45
Composite Area & Weighted Runoff Coeff.	35.96		0.45

****
SCS TR-55 Time of Concentration Computations Report
****

Sheet Flow Equation

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where:

Tc = Time of Concentration (hrs)
n = Manning's Roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation

```
          V  = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
          R  = Aq / Wp
          Tc = (Lf / V) / (3600 sec/hr)

          Where:

          Tc = Time of Concentration (hrs)
          Lf = Flow Length (ft)
          R  = Hydraulic Radius (ft)
          Aq = Flow Area (ft²)
          Wp = Wetted Perimeter (ft)
          V  = Velocity (ft/sec)
          Sf = Slope (ft/ft)
          n  = Manning's Roughness

  ------------------------
  Subbasin {Site 1}._E1
  ------------------------

  Shallow Concentrated Flow Computations
  --------------------------------------
                                                Subarea A           Subarea B           Subarea
C
          Flow Length (ft):                       1262.00                0.00
0.00
          Slope (%):                                 4.00                0.00
0.00
          Surface Type:                           Woodland             Unpaved
Unpaved
          Velocity (ft/sec):                         1.00                0.00
0.00
          Computed Flow Time (minutes):             21.03                0.00
0.00

=============================================================================================================
          Total TOC (minutes):                      21.03

=============================================================================================================


  ------------------------
  Subbasin {Site 1}._E2
  ------------------------

          User-Defined TOC override (minutes):     14.40

  **********************
  Subbasin Runoff Summary
  **********************

  -------------------------------------------------------------------------------------------
  Subbasin       Accumulated     Rainfall     Total      Peak  Weighted           Time of
  ID                  Precip    Intensity    Runoff    Runoff    Runoff      Concentration
                         in        in/hr        in       cfs     Coeff     days  hh:mm:ss
  -------------------------------------------------------------------------------------------
  {Site 1}._E1          0.79         2.25      0.35     14.08     0.450        0  00:21:01
  {Site 1}._E2          0.65         2.74      0.29     27.35     0.450        0  00:14:24
  -------------------------------------------------------------------------------------------


  Analysis began on:  Mon Jun 10 16:57:23 2019
  Analysis ended on:  Mon Jun 10 16:57:25 2019
  Total elapsed time: 00:00:02
```

APPENDIX C: PROPOSED CALCULATIONS & EXHIBIT

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UNMITIGATED CONDITION

Autodesk® Storm and Sanitary Analysis 2016 - Version 13.2.147 (Build 0)

****
Project Description
****
File Name ..... Merge Proposed Onsite Hydrology_CCA (Before Detention-Lennar Revs).SPF
Description ..... H:\1100\1176.30 Merge 56\Engineering\Reports\Drainage\Merge Private Storm Drain.dwg

****
Analysis Options
****
Flow Units ..... cfs
Subbasin Hydrograph Method. Rational
Time of Concentration..... SCS TR-55
Return Period..... 50 years
Link Routing Method ..... Kinematic Wave
Storage Node Exfiltration.. None
Starting Date SEP-26-2017 00:00:00
Ending Date SEP-27-2017 00:00:00
Report Time Step 00:00:10

****
Element Count
****
Number of subbasins 38
Number of nodes 81
Number of links 80

****
Subbasin Summary
****

Subbasin ID	Total Area acres
DMA01	0.45
DMA02	1.34
DMA03	0.37
DMA04	1.55
DMA05	0.30
DMA06	0.80
DMA07	0.13
DMA08	0.42
DMA09	0.54
DMA10	0.34
DMA11	0.22
DMA12	4.14
DMA13	5.52
DMA14	2.80
DMA15	1.35
DMA16	0.67
DMA17	0.39
DMA18	0.41
DMA19	0.45
DMA20	0.33
DMA21	0.42
DMA22	0.56
DMA23	0.59
DMA24	0.80
DMA25	0.40
DMA26	0.51
DMA27	0.42

DMA28	0.84
DMA29	1.26
DMA30	1.35
DMA31	2.64
DMA32	0.73
DMA33	0.66
DMA34	0.74
DMA35	0.86
DMA36	0.66
DMA37	0.10
DMA38	0.34

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
Jun-01	JUNCTION	346.29	369.77	0.00	
Jun-02	JUNCTION	358.01	375.41	0.00	
Jun-03	JUNCTION	362.89	372.14	0.00	
Jun-04	JUNCTION	361.20	370.24	0.00	
Jun-05	JUNCTION	362.85	369.15	0.00	
Jun-07	JUNCTION	365.60	376.08	0.00	
Jun-08	JUNCTION	367.76	375.18	0.00	
Jun-09	JUNCTION	370.56	378.43	0.00	
Jun-10	JUNCTION	374.88	382.05	0.00	
Jun-11	JUNCTION	387.20	395.43	0.00	
Jun-12	JUNCTION	383.38	393.29	0.00	
Jun-13	JUNCTION	380.90	389.54	0.00	
Jun-14	JUNCTION	379.11	387.57	0.00	
Jun-15	JUNCTION	376.71	383.93	0.00	
Jun-17	JUNCTION	374.13	382.45	0.00	
Jun-18	JUNCTION	372.36	382.57	0.00	
Jun-19	JUNCTION	370.42	379.05	0.00	
Jun-20	JUNCTION	368.22	373.46	0.00	
Jun-21	JUNCTION	359.66	373.22	0.00	
Jun-22	JUNCTION	362.54	376.72	0.00	
Jun-25	JUNCTION	378.92	384.01	0.00	
Jun-64	JUNCTION	384.07	390.31	0.00	
Jun-65	JUNCTION	382.95	393.88	0.00	
Jun-66	JUNCTION	380.08	395.21	0.00	
Jun-67	JUNCTION	378.51	392.50	0.00	
Jun-68	JUNCTION	377.79	392.07	0.00	
Jun-69	JUNCTION	376.32	391.50	0.00	
Jun-70	JUNCTION	375.69	389.68	0.00	
Jun-71	JUNCTION	374.96	387.44	0.00	
Jun-72	JUNCTION	373.33	386.90	0.00	
Jun-73	JUNCTION	371.18	385.75	0.00	
Jun-74	JUNCTION	368.25	382.94	0.00	
Jun-75	JUNCTION	367.22	381.80	0.00	
Jun-76	JUNCTION	365.05	379.20	0.00	
Jun-77	JUNCTION	364.42	377.30	0.00	
Jun-78	JUNCTION	372.80	386.00	0.00	
Jun-79	JUNCTION	374.28	388.80	0.00	
Jun-80	JUNCTION	379.45	390.70	0.00	
Jun-81	JUNCTION	381.79	388.24	0.00	
Jun-82	JUNCTION	383.32	389.90	0.00	
Jun-83	JUNCTION	362.67	367.60	0.00	
Out-POC'A'	OUTFALL	333.75	338.75	0.00	
Stor-01	STORAGE	347.00	362.00	0.00	

****
Inlet Summary

****

Inlet ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation ft	Inlet Rim Elevation ft	Ponded Area ft²	Initial Water Elevation ft	Grate Clogging Factor %
Inlet-001	FHWA HEC-22 GENERIC	N/A	On Sag	1	370.02	375.09	10.00	370.02	0.00
Inlet-002	FHWA HEC-22 GENERIC	N/A	On Sag	1	370.29	375.39	10.00	370.29	0.00
Inlet-003	FHWA HEC-22 GENERIC	N/A	On Sag	1	381.41	389.71	10.00	381.41	0.00
Inlet-004	FHWA HEC-22 GENERIC	N/A	On Sag	1	365.21	369.36	10.00	365.21	0.00
Inlet-005	FHWA HEC-22 GENERIC	N/A	On Sag	1	365.22	368.92	10.00	365.22	0.00
Inlet-006	FHWA HEC-22 GENERIC	N/A	On Sag	1	379.54	384.01	10.00	379.54	0.00
Inlet-007	FHWA HEC-22 GENERIC	N/A	On Sag	1	379.57	384.02	10.00	379.57	0.00
Inlet-008	FHWA HEC-22 GENERIC	N/A	On Sag	1	366.92	373.66	10.00	366.92	0.00
Inlet-009	FHWA HEC-22 GENERIC	N/A	On Sag	1	369.14	373.68	10.00	369.14	0.00
Inlet-012	FHWA HEC-22 GENERIC	N/A	On Sag	1	367.00	372.00	10.00	367.00	0.00
Inlet-013	FHWA HEC-22 GENERIC	N/A	On Sag	1	372.00	377.00	10.00	372.00	0.00
Inlet-014	FHWA HEC-22 GENERIC	N/A	On Sag	1	378.00	383.50	10.00	378.00	0.00
Inlet-23	FHWA HEC-22 GENERIC	N/A	On Sag	1	384.48	390.36	10.00	384.48	0.00
Inlet-24	FHWA HEC-22 GENERIC	N/A	On Sag	1	384.48	390.36	10.00	384.48	0.00
Inlet-25	FHWA HEC-22 GENERIC	N/A	On Sag	1	380.17	392.68	10.00	380.17	0.00
Inlet-26	FHWA HEC-22 GENERIC	N/A	On Sag	1	381.96	392.68	10.00	381.96	0.00
Inlet-27	FHWA HEC-22 GENERIC	N/A	On Sag	1	381.11	391.52	10.00	381.11	0.00
Inlet-28	FHWA HEC-22 GENERIC	N/A	On Sag	1	378.11	391.52	10.00	378.11	0.00
Inlet-29	FHWA HEC-22 GENERIC	N/A	On Sag	1	375.50	387.55	10.00	375.50	0.00
Inlet-30	FHWA HEC-22 GENERIC	N/A	On Sag	1	377.78	387.00	10.00	377.78	0.00
Inlet-31	FHWA HEC-22 GENERIC	N/A	On Sag	1	376.65	386.09	10.00	376.65	0.00
Inlet-32	FHWA HEC-22 GENERIC	N/A	On Sag	1	383.11	390.82	10.00	383.11	0.00
Inlet-33	FHWA HEC-22 GENERIC	N/A	On Sag	1	380.65	390.82	10.00	380.65	0.00
Inlet-34	FHWA HEC-22 GENERIC	N/A	On Sag	1	385.44	393.36	10.00	385.44	0.00
Inlet-35	FHWA HEC-22 GENERIC	N/A	On Sag	1	384.14	393.36	10.00	384.14	0.00
Inlet-36	FHWA HEC-22 GENERIC	N/A	On Sag	1	370.93	381.90	10.00	370.93	0.00
Inlet-37	FHWA HEC-22 GENERIC	N/A	On Sag	1	372.23	381.91	10.00	372.23	0.00
Inlet-38	FHWA HEC-22 GENERIC	N/A	On Sag	1	368.53	377.63	10.00	368.53	0.00
Inlet-39	FHWA HEC-22 GENERIC	N/A	On Sag	1	369.01	377.46	10.00	369.01	0.00
Inlet-40	FHWA HEC-22 GENERIC	N/A	On Sag	1	375.72	386.94	10.00	375.72	0.00
Inlet-41	FHWA HEC-22 GENERIC	N/A	On Sag	1	384.50	392.00	10.00	384.50	0.00
Inlet-42	FHWA HEC-22 GENERIC	N/A	On Sag	1	382.72	389.70	10.00	382.72	0.00
Inlet-43	FHWA HEC-22 GENERIC	N/A	On Sag	1	380.52	387.52	10.00	380.52	0.00
Inlet-44	FHWA HEC-22 GENERIC	N/A	On Sag	1	378.53	385.53	10.00	378.53	0.00
Inlet-45	FHWA HEC-22 GENERIC	N/A	On Sag	1	377.76	384.76	10.00	377.76	0.00
Inlet-46	FHWA HEC-22 GENERIC	N/A	On Sag	1	372.44	379.44	10.00	372.44	0.00
Inlet-47	FHWA HEC-22 GENERIC	N/A	On Sag	1	369.06	376.06	10.00	369.06	0.00
Inlet-48	FHWA HEC-22 GENERIC	N/A	On Sag	1	374.00	377.00	10.00	374.00	0.00

****
Roadway and Gutter Summary
****

Inlet ID	Roadway Longitudinal Slope ft/ft	Roadway Cross Slope ft/ft	Roadway Manning's Roughness	Gutter Cross Slope ft/ft	Gutter Width ft	Gutter Depression in
Inlet-001	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-002	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-003	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-004	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-005	-	0.0200	0.0160	0.0620	1.50	1.50
Inlet-006	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-007	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-008	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-009	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-012	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-013	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-014	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-23	-	0.0200	0.0160	0.0620	2.00	2.00

Inlet-24	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-25	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-26	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-27	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-28	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-29	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-30	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-31	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-32	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-33	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-34	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-35	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-36	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-37	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-38	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-39	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-40	-	0.0200	0.0160	0.0620	1.50	2.00
Inlet-41	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-42	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-43	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-44	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-45	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-46	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-47	-	0.0200	0.0160	0.0620	2.00	2.00
Inlet-48	-	0.0200	0.0160	0.0620	2.00	2.00

****
Link Summary
****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Link-001	Jun-01	Out-POC'A'	CONDUIT	43.6	25.2921	0.0150
Link-002	Stor-01	Jun-01	CONDUIT	30.7	1.9857	0.0150
Link-003	Jun-07	Jun-03	CONDUIT	329.6	0.7222	0.0150
Link-004	Jun-03	Jun-04	CONDUIT	187.1	0.7269	0.0150
Link-005	Jun-05	Jun-04	CONDUIT	63.7	0.3925	0.0150
Link-007	Inlet-005	Jun-05	CONDUIT	13.8	0.9455	0.0150
Link-008	Inlet-004	Jun-05	CONDUIT	8.3	1.5758	0.0150
Link-011	Jun-08	Jun-07	CONDUIT	264.2	0.6284	0.0150
Link-012	Jun-09	Jun-08	CONDUIT	228.8	1.0052	0.0150
Link-013	Jun-10	Jun-09	CONDUIT	225.0	1.7733	0.0150
Link-014	Jun-11	Jun-10	CONDUIT	296.4	3.9872	0.0150
Link-015	Inlet-013	Jun-07	CONDUIT	78.7	6.8624	0.0150
Link-016	Inlet-001	Jun-08	CONDUIT	19.5	11.5897	0.0150
Link-017	Inlet-002	Jun-08	CONDUIT	6.5	1.2308	0.0150
Link-018	Inlet-014	Jun-10	CONDUIT	56.0	4.6786	0.0150
Link-019	Jun-02	Stor-01	CONDUIT	15.0	0.5319	0.0150
Link-020	Jun-21	Jun-02	CONDUIT	264.8	0.4985	0.0150
Link-022	Inlet-008	Jun-21	CONDUIT	33.3	13.0827	0.0150
Link-023	Jun-20	Inlet-008	CONDUIT	64.9	1.4941	0.0150
Link-024	Jun-19	Jun-20	CONDUIT	186.4	1.0032	0.0150
Link-025	Jun-18	Jun-19	CONDUIT	160.6	1.0022	0.0150
Link-026	Jun-17	Jun-18	CONDUIT	144.6	0.9959	0.0150
Link-027	Jun-15	Jun-17	CONDUIT	180.6	0.9689	0.0150
Link-029	Jun-14	Jun-15	CONDUIT	259.1	0.7988	0.0150
Link-030	Jun-13	Jun-14	CONDUIT	143.4	1.0043	0.0150
Link-031	Jun-12	Jun-13	CONDUIT	215.7	0.9969	0.0150
Link-032	Inlet-009	Jun-20	CONDUIT	7.4	1.2129	0.0150
Link-033	Jun-25	Jun-18	CONDUIT	69.2	8.4851	0.0150
Link-034	Inlet-006	Jun-25	CONDUIT	5.2	5.5449	0.0150
Link-035	Inlet-007	Jun-25	CONDUIT	19.6	1.6368	0.0150
Link-037	Inlet-003	Jun-13	CONDUIT	3.9	4.5918	0.0150
Link-100	Jun-66	Jun-67	CONDUIT	110.0	1.4277	0.0150
Link-101	Inlet-25	Jun-67	CONDUIT	20.5	8.1015	0.0150
Link-102	Inlet-26	Jun-67	CONDUIT	21.1	16.3275	0.0150

Link-103	Jun-68	Jun-69	CONDUIT	39.1	3.7606	0.0150
Link-104	Inlet-27	Jun-69	CONDUIT	20.4	23.4919	0.0150
Link-105	Inlet-28	Jun-69	CONDUIT	20.0	8.9545	0.0150
Link-106	Jun-69	Jun-70	CONDUIT	119.1	0.5291	0.0150
Link-107	Jun-70	Jun-71	CONDUIT	148.3	0.4922	0.0150
Link-108	Inlet-29	Jun-71	CONDUIT	19.5	2.7636	0.0150
Link-109	Jun-71	Jun-72	CONDUIT	35.1	4.6373	0.0150
Link-110	Inlet-30	Jun-72	CONDUIT	20.9	21.3327	0.0150
Link-111	Jun-72	Jun-73	CONDUIT	66.2	3.2468	0.0150
Link-112	Jun-73	Jun-74	CONDUIT	102.8	2.8499	0.0150
Link-113	Jun-74	Jun-75	CONDUIT	38.6	2.6698	0.0150
Link-114	Inlet-37	Jun-75	CONDUIT	20.4	24.5950	0.0150
Link-115	Inlet-36	Jun-75	CONDUIT	19.9	18.5965	0.0150
Link-116	Jun-75	Jun-76	CONDUIT	92.8	2.3371	0.0150
Link-117	Jun-76	Jun-77	CONDUIT	64.6	0.9752	0.0150
Link-118	Inlet-38	Jun-77	CONDUIT	20.5	20.0782	0.0150
Link-119	Inlet-39	Jun-77	CONDUIT	21.3	21.5089	0.0150
Link-120	Jun-77	Jun-83	CONDUIT	24.9	7.0309	0.0150
Link-121	Jun-83	Jun-22	CONDUIT	11.0	0.8197	0.0150
Link-122	Inlet-48	Jun-83	CONDUIT	56.9	19.9261	0.0150
Link-123	Inlet-42	Jun-66	CONDUIT	242.2	1.0898	0.0150
Link-124	Inlet-43	Jun-68	CONDUIT	201.9	1.3518	0.0150
Link-125	Inlet-44	Jun-70	CONDUIT	193.2	1.4703	0.0150
Link-126	Inlet-45	Jun-71	CONDUIT	212.2	1.3196	0.0150
Link-127	Inlet-46	Jun-74	CONDUIT	195.4	2.1440	0.0150
Link-128	Inlet-47	Jun-76	CONDUIT	189.3	2.1181	0.0150
Link-131	Jun-82	Jun-81	CONDUIT	126.7	1.2079	0.0150
Link-132	Inlet-35	Jun-81	CONDUIT	16.9	13.9466	0.0150
Link-133	Inlet-34	Jun-81	CONDUIT	18.9	19.2612	0.0150
Link-134	Jun-81	Jun-80	CONDUIT	199.0	1.1758	0.0150
Link-135	Inlet-33	Jun-80	CONDUIT	18.4	6.5217	0.0150
Link-136	Inlet-32	Jun-80	CONDUIT	17.8	20.6197	0.0150
Link-137	Jun-80	Jun-79	CONDUIT	208.4	2.4808	0.0150
Link-138	Inlet-40	Jun-79	CONDUIT	18.3	7.8732	0.0150
Link-139	Jun-79	Jun-78	CONDUIT	40.2	3.6807	0.0150
Link-140	Inlet-31	Jun-78	CONDUIT	16.8	22.9440	0.0150
Link-141	Jun-78	Jun-73	CONDUIT	50.0	3.2381	0.0150
Link-86	Jun-22	Jun-21	CONDUIT	340.3	0.8846	0.0150
Link-87	Jun-04	Stor-01	CONDUIT	37.4	7.4104	0.0150
Link-88	Inlet-012	Jun-03	CONDUIT	33.6	18.6794	0.0150
Link-94	Inlet-41	Jun-65	CONDUIT	258.3	0.6001	0.0150
Link-95	Inlet-23	Jun-64	CONDUIT	21.1	1.9468	0.0150
Link-96	Inlet-24	Jun-64	CONDUIT	19.3	2.1288	0.0150
Link-97	Jun-64	Jun-65	CONDUIT	162.8	0.6881	0.0150
Link-98	Jun-65	Jun-66	CONDUIT	159.1	1.8042	0.0150
Link-99	Jun-67	Jun-68	CONDUIT	37.4	1.9256	0.0150

****
Cross Section Summary
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Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft²	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Link-001	CIRCULAR	3.50	3.50	1	9.62	0.88	438.52
Link-002	CIRCULAR	3.50	3.50	1	9.62	0.88	122.87
Link-003	CIRCULAR	3.00	3.00	1	7.07	0.75	49.12
Link-004	CIRCULAR	3.00	3.00	1	7.07	0.75	49.28
Link-005	CIRCULAR	2.00	2.00	1	3.14	0.50	12.28
Link-007	CIRCULAR	1.00	1.00	1	0.79	0.25	3.00
Link-008	CIRCULAR	1.50	1.50	1	1.77	0.38	11.43
Link-011	CIRCULAR	2.50	2.50	1	4.91	0.63	28.18
Link-012	CIRCULAR	2.00	2.00	1	3.14	0.50	19.66
Link-013	CIRCULAR	2.00	2.00	1	3.14	0.50	26.11
Link-014	CIRCULAR	1.50	1.50	1	1.77	0.38	18.18

Link-015	CIRCULAR	1.50	1.50	1	1.77	0.38	23.85
Link-016	CIRCULAR	1.00	1.00	1	0.79	0.25	10.51
Link-017	CIRCULAR	1.00	1.00	1	0.79	0.25	3.43
Link-018	CIRCULAR	1.25	1.25	1	1.23	0.31	12.11
Link-019	CIRCULAR	3.50	3.50	1	9.62	0.88	63.59
Link-020	CIRCULAR	3.50	3.50	1	9.62	0.88	61.56
Link-022	CIRCULAR	2.00	2.00	1	3.14	0.50	70.92
Link-023	CIRCULAR	2.00	2.00	1	3.14	0.50	23.97
Link-024	CIRCULAR	2.00	2.00	1	3.14	0.50	19.64
Link-025	CIRCULAR	2.00	2.00	1	3.14	0.50	19.63
Link-026	CIRCULAR	2.00	2.00	1	3.14	0.50	19.57
Link-027	CIRCULAR	1.50	1.50	1	1.77	0.38	8.96
Link-029	CIRCULAR	1.50	1.50	1	1.77	0.38	8.14
Link-030	CIRCULAR	1.50	1.50	1	1.77	0.38	9.12
Link-031	CIRCULAR	1.50	1.50	1	1.77	0.38	9.09
Link-032	CIRCULAR	1.50	1.50	1	1.77	0.38	10.03
Link-033	CIRCULAR	1.50	1.50	1	1.77	0.38	26.52
Link-034	CIRCULAR	1.00	1.00	1	0.79	0.25	7.27
Link-035	CIRCULAR	1.00	1.00	1	0.79	0.25	3.95
Link-037	CIRCULAR	1.50	1.50	1	1.77	0.38	19.51
Link-100	CIRCULAR	1.50	1.50	1	1.77	0.38	10.88
Link-101	CIRCULAR	1.50	1.50	1	1.77	0.38	25.91
Link-102	CIRCULAR	1.50	1.50	1	1.77	0.38	36.79
Link-103	CIRCULAR	2.00	2.00	1	3.14	0.50	38.02
Link-104	CIRCULAR	1.50	1.50	1	1.77	0.38	44.12
Link-105	CIRCULAR	1.50	1.50	1	1.77	0.38	27.24
Link-106	CIRCULAR	2.00	2.00	1	3.14	0.50	14.26
Link-107	CIRCULAR	2.00	2.00	1	3.14	0.50	13.75
Link-108	CIRCULAR	1.50	1.50	1	1.77	0.38	15.13
Link-109	CIRCULAR	2.50	2.50	1	4.91	0.63	76.55
Link-110	CIRCULAR	1.50	1.50	1	1.77	0.38	42.05
Link-111	CIRCULAR	2.50	2.50	1	4.91	0.63	64.05
Link-112	CIRCULAR	3.00	3.00	1	7.07	0.75	97.59
Link-113	CIRCULAR	3.00	3.00	1	7.07	0.75	94.45
Link-114	CIRCULAR	1.50	1.50	1	1.77	0.38	45.15
Link-115	CIRCULAR	1.50	1.50	1	1.77	0.38	39.26
Link-116	CIRCULAR	3.00	3.00	1	7.07	0.75	88.37
Link-117	CIRCULAR	3.00	3.00	1	7.07	0.75	57.08
Link-118	CIRCULAR	1.50	1.50	1	1.77	0.38	40.79
Link-119	CIRCULAR	1.50	1.50	1	1.77	0.38	42.22
Link-120	CIRCULAR	3.00	3.00	1	7.07	0.75	153.28
Link-121	CIRCULAR	3.00	3.00	1	7.07	0.75	52.33
Link-122	CIRCULAR	1.00	1.00	1	0.79	0.25	13.78
Link-123	CIRCULAR	1.50	1.50	1	1.77	0.38	9.50
Link-124	CIRCULAR	1.50	1.50	1	1.77	0.38	10.58
Link-125	CIRCULAR	1.50	1.50	1	1.77	0.38	11.04
Link-126	CIRCULAR	1.50	1.50	1	1.77	0.38	10.46
Link-127	CIRCULAR	1.50	1.50	1	1.77	0.38	13.33
Link-128	CIRCULAR	1.50	1.50	1	1.77	0.38	13.25
Link-131	CIRCULAR	2.00	2.00	1	3.14	0.50	21.55
Link-132	CIRCULAR	1.50	1.50	1	1.77	0.38	34.00
Link-133	CIRCULAR	1.50	1.50	1	1.77	0.38	39.95
Link-134	CIRCULAR	2.00	2.00	1	3.14	0.50	21.26
Link-135	CIRCULAR	1.50	1.50	1	1.77	0.38	23.25
Link-136	CIRCULAR	1.50	1.50	1	1.77	0.38	41.34
Link-137	CIRCULAR	2.00	2.00	1	3.14	0.50	30.88
Link-138	CIRCULAR	1.50	1.50	1	1.77	0.38	25.54
Link-139	CIRCULAR	2.50	2.50	1	4.91	0.63	68.20
Link-140	CIRCULAR	1.50	1.50	1	1.77	0.38	43.61
Link-141	CIRCULAR	2.50	2.50	1	4.91	0.63	63.97
Link-86	CIRCULAR	3.00	3.00	1	7.07	0.75	54.37
Link-87	CIRCULAR	3.00	3.00	1	7.07	0.75	157.36
Link-88	CIRCULAR	1.50	1.50	1	1.77	0.38	39.35
Link-94	CIRCULAR	1.00	1.00	1	0.79	0.25	2.39
Link-95	CIRCULAR	1.50	1.50	1	1.77	0.38	12.70
Link-96	CIRCULAR	1.50	1.50	1	1.77	0.38	13.28
Link-97	CIRCULAR	1.50	1.50	1	1.77	0.38	7.55

Link-98	CIRCULAR	1.50	1.50	1	1.77	0.38	12.23
Link-99	CIRCULAR	1.50	1.50	1	1.77	0.38	12.63

Runoff Quantity Continuity	Volume acre-ft	Depth inches
Total Precipitation	1.156	0.381
Continuity Error (%)	0.203	

Flow Routing Continuity	Volume acre-ft	Volume Mgallons
External Inflow	0.000	0.000
External Outflow	0.846	0.276
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.000	0.000
Continuity Error (%)	0.071	

Runoff Coefficient Computations Report

Subbasin DMA01

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.45	D	0.85
Composite Area & Weighted Runoff Coeff.	0.45		0.85

Subbasin DMA02

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.34	D	0.85
Composite Area & Weighted Runoff Coeff.	1.34		0.85

Subbasin DMA03

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.37	D	0.85
Composite Area & Weighted Runoff Coeff.	0.37		0.85

Subbasin DMA04

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.55	D	0.85
Composite Area & Weighted Runoff Coeff.	1.55		0.85

Subbasin DMA05

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.

-	0.30	D	0.85
Composite Area & Weighted Runoff Coeff.	0.30		0.85

Subbasin DMA06

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.80	D	0.85
Composite Area & Weighted Runoff Coeff.	0.80		0.85

Subbasin DMA07

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.13	D	0.85
Composite Area & Weighted Runoff Coeff.	0.13		0.85

Subbasin DMA08

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.42	D	0.85
Composite Area & Weighted Runoff Coeff.	0.42		0.85

Subbasin DMA09

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.54	D	0.85
Composite Area & Weighted Runoff Coeff.	0.54		0.85

Subbasin DMA10

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.34	-	0.85
Composite Area & Weighted Runoff Coeff.	0.34		0.85

Subbasin DMA11

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.22	-	0.85
Composite Area & Weighted Runoff Coeff.	0.22		0.85

Subbasin DMA12

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	4.14	D	0.85
Composite Area & Weighted Runoff Coeff.	4.14		0.85

Subbasin DMA13

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	5.52	D	0.85
Composite Area & Weighted Runoff Coeff.	5.52		0.85

Subbasin DMA14

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	2.80	D	0.85
Composite Area & Weighted Runoff Coeff.	2.80		0.85

Subbasin DMA15

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.35	-	0.85
Composite Area & Weighted Runoff Coeff.	1.35		0.85

Subbasin DMA16

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.67	-	0.85
Composite Area & Weighted Runoff Coeff.	0.67		0.85

Subbasin DMA17

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.39	-	0.85
Composite Area & Weighted Runoff Coeff.	0.39		0.85

Subbasin DMA18

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.41	-	0.85
Composite Area & Weighted Runoff Coeff.	0.41		0.85

Subbasin DMA19

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.45	-	0.85
Composite Area & Weighted Runoff Coeff.	0.45		0.85

Subbasin DMA20

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.33	-	0.85
Composite Area & Weighted Runoff Coeff.	0.33		0.85

Subbasin DMA21

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.42	-	0.85
Composite Area & Weighted Runoff Coeff.	0.42		0.85

Subbasin DMA22

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.56	-	0.85
Composite Area & Weighted Runoff Coeff.	0.56		0.85

Subbasin DMA23

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.59	-	0.85
Composite Area & Weighted Runoff Coeff.	0.59		0.85

Subbasin DMA24

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.80	-	0.85
Composite Area & Weighted Runoff Coeff.	0.80		0.85

Subbasin DMA25

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.40	-	0.85
Composite Area & Weighted Runoff Coeff.	0.40		0.85

Subbasin DMA26

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.51	-	0.70
Composite Area & Weighted Runoff Coeff.	0.51		0.70

Subbasin DMA27

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.42	-	0.70
Composite Area & Weighted Runoff Coeff.	0.42		0.70

Subbasin DMA28

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.84	-	0.70
Composite Area & Weighted Runoff Coeff.	0.84		0.70

Subbasin DMA29

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	5.00	-	0.70
Composite Area & Weighted Runoff Coeff.	5.00		0.70

Subbasin DMA30

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	1.35	-	0.70
Composite Area & Weighted Runoff Coeff.	1.35		0.70

Subbasin DMA31

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	5.00	-	0.70
Composite Area & Weighted Runoff Coeff.	5.00		0.70

Subbasin DMA32

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	5.00	-	0.70
Composite Area & Weighted Runoff Coeff.	5.00		0.70

Subbasin DMA33

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.66	-	0.70
Composite Area & Weighted Runoff Coeff.	0.66		0.70

Subbasin DMA34

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	5.00	-	0.70
Composite Area & Weighted Runoff Coeff.	5.00		0.70

Subbasin DMA35

Area	Soil	Runoff

Soil/Surface Description	(acres)	Group	Coeff.
-	0.86	-	0.70
Composite Area & Weighted Runoff Coeff.	0.86		0.70

Subbasin DMA36

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.66	-	0.70
Composite Area & Weighted Runoff Coeff.	0.66		0.70

Subbasin DMA37

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.10	-	0.85
Composite Area & Weighted Runoff Coeff.	0.10		0.85

Subbasin DMA38

Soil/Surface Description	Area (acres)	Soil Group	Runoff Coeff.
-	0.34	-	0.35
Composite Area & Weighted Runoff Coeff.	0.34		0.35

****
SCS TR-55 Time of Concentration Computations Report
****

Sheet Flow Equation

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where:

Tc = Time of Concentration (hrs)
n = Manning's Roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)

V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hrs)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's Roughness

Subbasin DMA01

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	766.00	0.00	0.00
Channel Slope (%):	2.87	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.93	0.00	0.00
Computed Flow Time (minutes):	4.35	0.00	0.00
Total TOC (minutes):	5.95		

Subbasin DMA02

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C

Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	960.00	0.00	0.00
Channel Slope (%):	2.29	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.62	0.00	0.00
Computed Flow Time (minutes):	6.11	0.00	0.00
Total TOC (minutes):	7.70		

Subbasin DMA03

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	281.00	0.00	0.00
Channel Slope (%):	2.80	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.90	0.00	0.00
Computed Flow Time (minutes):	1.62	0.00	0.00
Total TOC (minutes):	3.21		

Subbasin DMA04

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	1530.00	0.00	0.00
Channel Slope (%):	1.00	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.73	0.00	0.00
Computed Flow Time (minutes):	14.73	0.00	0.00
Total TOC (minutes):	16.32		

Subbasin DMA05

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	654.00	0.00	0.00
Channel Slope (%):	1.22	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.91	0.00	0.00
Computed Flow Time (minutes):	5.70	0.00	0.00
Total TOC (minutes):	7.29		

Subbasin DMA06

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	680.00	0.00	0.00
Channel Slope (%):	1.25	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.93	0.00	0.00
Computed Flow Time (minutes):	5.86	0.00	0.00
Total TOC (minutes):	7.45		

Subbasin DMA07

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	150.00	0.00	0.00
Channel Slope (%):	1.50	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.12	0.00	0.00
Computed Flow Time (minutes):	1.18	0.00	0.00
Total TOC (minutes):	2.77		

Subbasin DMA08

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	320.00	0.00	0.00
Channel Slope (%):	2.19	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.56	0.00	0.00
Computed Flow Time (minutes):	2.08	0.00	0.00
Total TOC (minutes):	3.67		

Subbasin DMA09

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	390.00	0.00	0.00
Channel Slope (%):	3.00	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	3.00	0.00	0.00
Computed Flow Time (minutes):	2.17	0.00	0.00
Total TOC (minutes):	3.76		

Subbasin DMA10

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	2.20	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.72	0.00	0.00
Computed Flow Time (minutes):	1.16	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	255.00	0.00	0.00
Channel Slope (%):	2.20	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.22	0.00	0.00
Computed Flow Time (minutes):	1.91	0.00	0.00
Total TOC (minutes):	3.07		

Subbasin DMA11

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	2.20	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.72	0.00	0.00
Computed Flow Time (minutes):	1.16	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	210.00	0.00	0.00
Channel Slope (%):	2.20	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.22	0.00	0.00
Computed Flow Time (minutes):	1.57	0.00	0.00

Total TOC (minutes):	2.73

Subbasin DMA12

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	2.03	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.70	0.00	0.00
Computed Flow Time (minutes):	1.20	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	493.00	0.00	0.00
Slope (%):	2.03	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.90	0.00	0.00
Computed Flow Time (minutes):	2.83	0.00	0.00

Total TOC (minutes):	4.03

Subbasin DMA13

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.16	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.56	0.00	0.00
Computed Flow Time (minutes):	1.50	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	637.00	0.00	0.00
Slope (%):	1.16	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.19	0.00	0.00
Computed Flow Time (minutes):	4.85	0.00	0.00

Total TOC (minutes):	6.35

Subbasin DMA14

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00

Flow Length (ft):	50.00	0.00	0.00
Slope (%):	3.62	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.88	0.00	0.00
Computed Flow Time (minutes):	0.95	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	447.00	0.00	0.00
Slope (%):	3.62	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	3.87	0.00	0.00
Computed Flow Time (minutes):	1.93	0.00	0.00
Total TOC (minutes):	2.88		

Subbasin DMA15

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	172.00	0.00	0.00
Slope (%):	2.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.87	0.00	0.00
Computed Flow Time (minutes):	1.00	0.00	0.00
Total TOC (minutes):	2.59		

Subbasin DMA16

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	180.00	0.00	0.00
Slope (%):	1.62	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.59	0.00	0.00

Computed Flow Time (minutes):	1.16	0.00	0.00
Total TOC (minutes):	2.75		

Subbasin DMA17

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	155.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.03	0.00	0.00
Computed Flow Time (minutes):	1.27	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	37.00	0.00	0.00
Channel Slope (%):	1.60	0.00	0.00
Cross Section Area (ft^2):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.90	0.00	0.00
Computed Flow Time (minutes):	0.33	0.00	0.00
Total TOC (minutes):	3.19		

Subbasin DMA18

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	123.00	0.00	0.00
Slope (%):	1.90	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.80	0.00	0.00
Computed Flow Time (minutes):	0.73	0.00	0.00

Total TOC (minutes):	2.32

Subbasin DMA19

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	152.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.03	0.00	0.00
Computed Flow Time (minutes):	1.25	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Channel Slope (%):	1.60	0.00	0.00
Cross Section Area (ft^2):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.90	0.00	0.00
Computed Flow Time (minutes):	0.44	0.00	0.00
Total TOC (minutes):	3.28		

Subbasin DMA20

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	124.00	0.00	0.00
Slope (%):	1.90	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.80	0.00	0.00
Computed Flow Time (minutes):	0.74	0.00	0.00
Total TOC (minutes):	2.33		

Subbasin DMA21

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	128.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.03	0.00	0.00
Computed Flow Time (minutes):	1.05	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	109.00	0.00	0.00
Channel Slope (%):	1.60	0.00	0.00
Cross Section Area (ft^2):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.90	0.00	0.00
Computed Flow Time (minutes):	0.96	0.00	0.00
Total TOC (minutes):	3.60		

Subbasin DMA22

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	164.00	0.00	0.00
Slope (%):	1.40	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.41	0.00	0.00
Computed Flow Time (minutes):	1.13	0.00	0.00
Total TOC (minutes):	2.73		

Subbasin DMA23

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	140.00	0.00	0.00
Slope (%):	1.50	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.49	0.00	0.00
Computed Flow Time (minutes):	0.94	0.00	0.00
Total TOC (minutes):	2.53		

Subbasin DMA24

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	186.00	0.00	0.00
Slope (%):	1.10	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.13	0.00	0.00
Computed Flow Time (minutes):	1.46	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	131.00	0.00	0.00
Channel Slope (%):	2.80	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.51	0.00	0.00
Computed Flow Time (minutes):	0.87	0.00	0.00
Total TOC (minutes):	3.92		

Subbasin DMA25

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	120.00	0.00	0.00
Slope (%):	1.70	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.65	0.00	0.00
Computed Flow Time (minutes):	0.75	0.00	0.00
Total TOC (minutes):	2.35		

Subbasin DMA26

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	99.00	0.00	0.00
Slope (%):	3.10	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	3.58	0.00	0.00
Computed Flow Time (minutes):	0.46	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	57.00	0.00	0.00
Channel Slope (%):	2.80	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.51	0.00	0.00
Computed Flow Time (minutes):	0.38	0.00	0.00
Total TOC (minutes):	2.43		

Subbasin DMA27

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	33.00	0.00	0.00
Slope (%):	1.60	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.58	0.00	0.00
Computed Flow Time (minutes):	0.95	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	205.00	0.00	0.00
Channel Slope (%):	2.50	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.37	0.00	0.00
Computed Flow Time (minutes):	1.44	0.00	0.00
Total TOC (minutes):	2.39		

Subbasin DMA28

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	187.00	0.00	0.00
Slope (%):	1.10	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.13	0.00	0.00
Computed Flow Time (minutes):	1.46	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	98.00	0.00	0.00
Channel Slope (%):	2.20	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.22	0.00	0.00
Computed Flow Time (minutes):	0.73	0.00	0.00
Total TOC (minutes):	3.79		

Subbasin DMA29

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	163.00	0.00	0.00
Slope (%):	1.10	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.13	0.00	0.00
Computed Flow Time (minutes):	1.28	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	174.00	0.00	0.00
Channel Slope (%):	1.20	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.64	0.00	0.00
Computed Flow Time (minutes):	1.76	0.00	0.00
Total TOC (minutes):	4.63		

Subbasin DMA30

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	146.00	0.00	0.00
Slope (%):	1.30	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.32	0.00	0.00
Computed Flow Time (minutes):	1.05	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	255.00	0.00	0.00
Channel Slope (%):	1.00	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.50	0.00	0.00
Computed Flow Time (minutes):	2.83	0.00	0.00

Total TOC (minutes):	5.47

Subbasin DMA31

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	90.00	0.00	0.00
Slope (%):	0.60	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.48	0.00	0.00
Computed Flow Time (minutes):	3.12	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	212.00	0.00	0.00
Slope (%):	2.40	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	3.15	0.00	0.00
Computed Flow Time (minutes):	1.12	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	316.00	0.00	0.00
Channel Slope (%):	2.20	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.22	0.00	0.00
Computed Flow Time (minutes):	2.37	0.00	0.00

Total TOC (minutes):	6.61

Subbasin DMA32

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	14.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	1.50	0.00	0.00
Computed Flow Time (minutes):	0.55	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	183.00	0.00	0.00
Slope (%):	2.50	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	3.21	0.00	0.00
Computed Flow Time (minutes):	0.95	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	141.00	0.00	0.00
Channel Slope (%):	2.20	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.22	0.00	0.00
Computed Flow Time (minutes):	1.06	0.00	0.00
Total TOC (minutes):	2.56		

Subbasin DMA33

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	120.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.03	0.00	0.00
Computed Flow Time (minutes):	0.99	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	77.00	0.00	0.00
Channel Slope (%):	1.60	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.90	0.00	0.00
Computed Flow Time (minutes):	0.68	0.00	0.00
Total TOC (minutes):	3.25		

Subbasin DMA34

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	120.00	0.00	0.00
Slope (%):	2.90	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	3.46	0.00	0.00
Computed Flow Time (minutes):	0.58	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	49.00	0.00	0.00
Channel Slope (%):	1.60	0.00	0.00
Cross Section Area (ft^2):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.90	0.00	0.00
Computed Flow Time (minutes):	0.43	0.00	0.00
Total TOC (minutes):	2.60		

Subbasin DMA35

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	100.00	0.00	0.00
Slope (%):	8.70	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	1.43	0.00	0.00
Computed Flow Time (minutes):	1.17	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	120.00	0.00	0.00
Slope (%):	1.40	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.41	0.00	0.00
Computed Flow Time (minutes):	0.83	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	52.00	0.00	0.00
Channel Slope (%):	1.90	0.00	0.00
Cross Section Area (ft^2):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.07	0.00	0.00
Computed Flow Time (minutes):	0.42	0.00	0.00
Total TOC (minutes):	2.42		

Subbasin DMA36

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	50.00	0.00	0.00
Slope (%):	1.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.52	0.00	0.00
Computed Flow Time (minutes):	1.59	0.00	0.00

Shallow Concentrated Flow Computations

	Subarea A	Subarea B	Subarea C
Flow Length (ft):	150.00	0.00	0.00
Slope (%):	1.70	0.00	0.00
Surface Type:	Paved	Unpaved	Unpaved
Velocity (ft/sec):	2.65	0.00	0.00
Computed Flow Time (minutes):	0.94	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	93.00	0.00	0.00
Channel Slope (%):	1.20	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	1.64	0.00	0.00
Computed Flow Time (minutes):	0.94	0.00	0.00
Total TOC (minutes):	3.48		

Subbasin DMA37

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	45.00	0.00	0.00
Slope (%):	2.80	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	0.77	0.00	0.00
Computed Flow Time (minutes):	0.97	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.01	0.00	0.00
Flow Length (ft):	94.00	0.00	0.00
Channel Slope (%):	2.80	0.00	0.00
Cross Section Area (ft²):	0.13	0.00	0.00
Wetted Perimeter (ft):	2.13	0.00	0.00
Velocity (ft/sec):	2.51	0.00	0.00
Computed Flow Time (minutes):	0.62	0.00	0.00
Total TOC (minutes):	1.59		

Subbasin DMA38

Sheet Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.02	0.00	0.00
Flow Length (ft):	48.00	0.00	0.00
Slope (%):	23.00	0.00	0.00
2 yr, 24 hr Rainfall (in):	1.75	1.75	1.75
Velocity (ft/sec):	1.45	0.00	0.00
Computed Flow Time (minutes):	0.55	0.00	0.00

Channel Flow Computations

	Subarea A	Subarea B	Subarea C
Manning's Roughness:	0.02	0.00	0.00
Flow Length (ft):	887.00	0.00	0.00
Channel Slope (%):	1.00	0.00	0.00
Cross Section Area (ft²):	1.57	0.00	0.00
Wetted Perimeter (ft):	3.14	0.00	0.00
Velocity (ft/sec):	4.69	0.00	0.00
Computed Flow Time (minutes):	3.15	0.00	0.00
Total TOC (minutes):	3.70		

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Subbasin Runoff Summary
****

Subbasin ID	Accumulated Precip in	Rainfall Intensity in/hr	Total Runoff in	Peak Runoff cfs	Weighted Runoff Coeff	Time of Concentration days	Time of Concentration hh:mm:ss
DMA01	0.39	3.91	0.33	1.49	0.850	0	00:05:57
DMA02	0.46	3.63	0.39	4.13	0.850	0	00:07:42
DMA03	0.34	4.10	0.29	1.28	0.850	0	00:05:00
DMA04	0.70	2.57	0.60	3.39	0.850	0	00:16:19
DMA05	0.45	3.67	0.38	0.92	0.850	0	00:07:17
DMA06	0.46	3.65	0.39	2.50	0.850	0	00:07:27
DMA07	0.34	4.10	0.29	0.45	0.850	0	00:05:00
DMA08	0.34	4.10	0.29	1.47	0.850	0	00:05:00
DMA09	0.34	4.10	0.29	1.88	0.850	0	00:05:00
DMA10	0.34	4.10	0.29	1.18	0.850	0	00:05:00
DMA11	0.34	4.10	0.29	0.77	0.850	0	00:05:00
DMA12	0.34	4.10	0.29	14.41	0.850	0	00:05:00
DMA13	0.40	3.83	0.34	17.93	0.850	0	00:06:21
DMA14	0.34	4.10	0.29	9.76	0.850	0	00:05:00
DMA15	0.34	4.10	0.29	4.70	0.850	0	00:05:00
DMA16	0.34	4.10	0.29	2.33	0.850	0	00:05:00
DMA17	0.34	4.10	0.29	1.36	0.850	0	00:05:00
DMA18	0.34	4.10	0.29	1.43	0.850	0	00:05:00
DMA19	0.34	4.10	0.29	1.57	0.850	0	00:05:00
DMA20	0.34	4.10	0.29	1.15	0.850	0	00:05:00
DMA21	0.34	4.10	0.29	1.46	0.850	0	00:05:00
DMA22	0.34	4.10	0.29	1.95	0.850	0	00:05:00
DMA23	0.34	4.10	0.29	2.06	0.850	0	00:05:00
DMA24	0.34	4.10	0.29	2.79	0.850	0	00:05:00
DMA25	0.34	4.10	0.29	1.39	0.850	0	00:05:00
DMA26	0.34	4.10	0.24	1.46	0.700	0	00:05:00
DMA27	0.34	4.10	0.24	1.21	0.700	0	00:05:00
DMA28	0.34	4.10	0.24	2.41	0.700	0	00:05:00
DMA29	0.34	4.10	0.24	3.62	0.700	0	00:05:00
DMA30	0.37	4.00	0.26	3.78	0.700	0	00:05:28
DMA31	0.42	3.77	0.29	6.97	0.700	0	00:06:36
DMA32	0.34	4.10	0.24	2.10	0.700	0	00:05:00
DMA33	0.34	4.10	0.24	1.89	0.700	0	00:05:00
DMA34	0.34	4.10	0.24	2.12	0.700	0	00:05:00
DMA35	0.34	4.10	0.24	2.47	0.700	0	00:05:00

DMA36	0.34	4.10	0.24	1.89	0.700	0	00:05:00
DMA37	0.34	4.10	0.29	0.35	0.850	0	00:05:00
DMA38	0.34	4.10	0.12	0.49	0.350	0	00:05:00

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Node Depth Summary
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Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Flooded Time minutes	Retention Time hh:mm:ss
Jun-01	0.35	2.95	349.24	0	00:07	0	0	0:00:00
Jun-02	0.35	2.69	360.70	0	00:07	0	0	0:00:00
Jun-03	0.34	2.03	364.92	0	00:07	0	0	0:00:00
Jun-04	1.41	2.35	363.55	0	00:07	0	0	0:00:00
Jun-05	2.25	2.79	365.64	0	00:16	0	0	0:00:00
Jun-07	1.01	1.97	367.57	0	00:06	0	0	0:00:00
Jun-08	3.31	4.30	372.06	0	00:07	0	0	0:00:00
Jun-09	0.33	1.16	371.72	0	00:05	0	0	0:00:00
Jun-10	0.50	1.35	376.23	0	00:05	0	0	0:00:00
Jun-11	0.00	0.00	387.20	0	00:00	0	0	0:00:00
Jun-12	0.00	0.00	383.38	0	00:00	0	0	0:00:00
Jun-13	0.33	0.59	381.49	0	00:05	0	0	0:00:00
Jun-14	0.35	0.72	379.83	0	00:05	0	0	0:00:00
Jun-15	0.33	0.71	377.42	0	00:06	0	0	0:00:00
Jun-17	0.83	1.19	375.32	0	00:07	0	0	0:00:00
Jun-18	0.69	1.01	373.37	0	00:07	0	0	0:00:00
Jun-19	0.33	0.93	371.35	0	00:08	0	0	0:00:00
Jun-20	0.83	1.27	369.49	0	00:05	0	0	0:00:00
Jun-21	2.91	3.27	362.93	0	00:07	0	0	0:00:00
Jun-22	0.14	2.20	364.74	0	00:06	0	0	0:00:00
Jun-25	0.33	0.73	379.65	0	00:07	0	0	0:00:00
Jun-64	0.00	0.52	384.59	0	00:05	0	0	0:00:00
Jun-65	0.01	1.00	383.95	0	00:04	0	0	0:00:00
Jun-66	0.00	0.83	380.91	0	00:05	0	0	0:00:00
Jun-67	0.01	0.98	379.49	0	00:05	0	0	0:00:00
Jun-68	0.01	0.98	378.77	0	00:05	0	0	0:00:00
Jun-69	0.01	15.18	391.50	0	00:05	0.00	0	0:00:00
Jun-70	0.03	13.99	389.68	0	00:05	0.03	2	0:00:00
Jun-71	0.01	1.91	376.87	0	00:06	0	0	0:00:00
Jun-72	0.01	0.94	374.27	0	00:05	0	0	0:00:00
Jun-73	0.01	1.28	372.46	0	00:06	0	0	0:00:00
Jun-74	0.01	1.33	369.58	0	00:06	0	0	0:00:00
Jun-75	0.01	1.41	368.63	0	00:06	0	0	0:00:00
Jun-76	0.01	1.88	366.93	0	00:06	0	0	0:00:00
Jun-77	0.01	1.88	366.30	0	00:06	0	0	0:00:00
Jun-78	0.01	0.90	373.70	0	00:05	0	0	0:00:00
Jun-79	0.01	0.94	375.22	0	00:06	0	0	0:00:00
Jun-80	0.01	0.96	380.41	0	00:07	0	0	0:00:00
Jun-81	0.01	0.96	382.75	0	00:06	0	0	0:00:00
Jun-82	0.00	0.00	383.32	0	00:00	0	0	0:00:00
Jun-83	0.01	2.13	364.80	0	00:06	0	0	0:00:00
Out-POC'A'	1.51	2.67	336.42	0	00:08	0	0	0:00:00
Stor-01	0.27	15.00	362.00	0	00:07	0.01	0	0:00:00

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Node Flow Summary
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Node	Element	Maximum	Peak	Time of	Maximum Time of Peak

ID	Type	Lateral Inflow cfs	Inflow cfs	Peak Inflow Occurrence days	Peak Inflow Occurrence hh:mm	Flooding Overflow cfs	Flooding Occurrence days	Flooding Occurrence hh:mm
Jun-01	JUNCTION	0.00	111.80	0	00:07	0.00		
Jun-02	JUNCTION	0.00	49.10	0	00:07	0.00		
Jun-03	JUNCTION	0.00	39.21	0	00:07	0.00		
Jun-04	JUNCTION	0.00	41.44	0	00:07	0.00		
Jun-05	JUNCTION	0.00	3.39	0	00:16	0.00		
Jun-07	JUNCTION	0.00	31.20	0	00:06	0.00		
Jun-08	JUNCTION	0.00	13.86	0	00:06	0.00		
Jun-09	JUNCTION	0.00	9.43	0	00:05	0.00		
Jun-10	JUNCTION	0.00	9.71	0	00:05	0.00		
Jun-11	JUNCTION	0.00	0.00	0	00:00	0.00		
Jun-12	JUNCTION	0.00	0.00	0	00:00	0.00		
Jun-13	JUNCTION	0.00	1.26	0	00:05	0.00		
Jun-14	JUNCTION	0.00	1.23	0	00:05	0.00		
Jun-15	JUNCTION	0.00	1.17	0	00:06	0.00		
Jun-17	JUNCTION	0.00	1.14	0	00:07	0.00		
Jun-18	JUNCTION	0.00	3.82	0	00:07	0.00		
Jun-19	JUNCTION	0.00	3.79	0	00:08	0.00		
Jun-20	JUNCTION	0.00	4.44	0	00:08	0.00		
Jun-21	JUNCTION	0.00	49.37	0	00:06	0.00		
Jun-22	JUNCTION	0.00	44.69	0	00:06	0.00		
Jun-25	JUNCTION	0.00	2.69	0	00:07	0.00		
Jun-64	JUNCTION	0.00	1.94	0	00:05	0.00		
Jun-65	JUNCTION	0.00	4.25	0	00:05	0.00		
Jun-66	JUNCTION	0.00	6.41	0	00:05	0.00		
Jun-67	JUNCTION	0.00	9.63	0	00:05	0.00		
Jun-68	JUNCTION	0.00	10.98	0	00:05	0.00		
Jun-69	JUNCTION	0.00	14.32	0	00:05	0.06	0	00:05
Jun-70	JUNCTION	0.00	16.23	0	00:05	2.46	0	00:05
Jun-71	JUNCTION	0.00	18.01	0	00:05	0.00		
Jun-72	JUNCTION	0.00	19.14	0	00:05	0.00		
Jun-73	JUNCTION	0.00	36.69	0	00:06	0.00		
Jun-74	JUNCTION	0.00	38.50	0	00:06	0.00		
Jun-75	JUNCTION	0.00	39.77	0	00:06	0.00		
Jun-76	JUNCTION	0.00	40.98	0	00:06	0.00		
Jun-77	JUNCTION	0.00	44.30	0	00:06	0.00		
Jun-78	JUNCTION	0.00	17.59	0	00:05	0.00		
Jun-79	JUNCTION	0.00	15.83	0	00:05	0.00		
Jun-80	JUNCTION	0.00	13.87	0	00:05	0.00		
Jun-81	JUNCTION	0.00	9.95	0	00:06	0.00		
Jun-82	JUNCTION	0.00	0.00	0	00:00	0.00		
Jun-83	JUNCTION	0.00	44.69	0	00:06	0.00		
Out-POC'A'	OUTFALL	0.00	105.19	0	00:08	0.00		
Stor-01	STORAGE	0.00	90.50	0	00:07	7.93	0	00:07

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Inlet Depth Summary
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Inlet ID	Max Gutter Spread during Peak Flow ft	Max Gutter Water Elev during Peak Flow ft	Max Gutter Water Depth during Peak Flow ft	Time of Maximum Depth Occurrence days	Time of Maximum Depth Occurrence hh:mm
Inlet-001	8.18	375.50	0.41	0	00:06
Inlet-002	11.18	375.86	0.47	0	00:06
Inlet-003	7.64	390.10	0.39	0	00:05
Inlet-004	13.67	369.88	0.52	0	00:16
Inlet-005	3.02	369.15	0.23	0	00:07
Inlet-006	49.70	385.22	1.21	0	00:07
Inlet-007	0.07	384.13	0.11	0	00:05

Inlet-008	12.94	374.16	0.50	0	00:08
Inlet-009	23.90	374.39	0.71	0	00:05
Inlet-012	79.85	373.78	1.78	0	00:05
Inlet-013	125.07	379.72	2.72	0	00:06
Inlet-014	28.88	384.33	0.83	0	00:05
Inlet-23	9.03	390.79	0.43	0	00:05
Inlet-24	6.25	390.67	0.31	0	00:05
Inlet-25	16.34	393.24	0.56	0	00:05
Inlet-26	10.88	393.13	0.45	0	00:05
Inlet-27	11.99	391.99	0.47	0	00:05
Inlet-28	14.81	392.05	0.53	0	00:05
Inlet-29	13.71	388.05	0.50	0	00:05
Inlet-30	11.43	387.46	0.46	0	00:05
Inlet-31	14.69	386.61	0.52	0	00:05
Inlet-32	21.13	391.47	0.65	0	00:05
Inlet-33	13.71	391.32	0.50	0	00:05
Inlet-34	21.78	394.02	0.66	0	00:05
Inlet-35	38.41	394.36	1.00	0	00:06
Inlet-36	10.07	382.33	0.43	0	00:05
Inlet-37	3.13	382.05	0.14	0	00:05
Inlet-38	11.43	378.09	0.46	0	00:05
Inlet-39	17.76	378.04	0.58	0	00:05
Inlet-40	16.09	387.49	0.55	0	00:05
Inlet-41	17.31	392.60	0.60	0	00:02
Inlet-42	10.40	390.16	0.46	0	00:05
Inlet-43	7.12	387.91	0.39	0	00:05
Inlet-44	6.04	385.90	0.37	0	00:05
Inlet-45	9.13	385.19	0.43	0	00:05
Inlet-46	9.50	379.88	0.44	0	00:05
Inlet-47	6.98	376.45	0.39	0	00:05
Inlet-48	0.07	377.12	0.12	0	00:05

****
Inlet Flow Summary
****

Inlet ID	Peak Flow cfs	Peak Lateral Flow cfs	Peak Flow Intercepted by Inlet cfs	Peak Flow Bypassing Inlet cfs	Inlet Efficiency during Peak Flow %	Total Flooding acre-in	Total Time Flooded minutes
Inlet-001	1.49	1.49	-	-	-	0.000	0
Inlet-002	4.13	4.13	-	-	-	0.000	0
Inlet-003	1.28	1.28	-	-	-	0.000	0
Inlet-004	3.39	3.39	-	-	-	0.000	0
Inlet-005	0.92	0.92	-	-	-	0.000	0
Inlet-006	2.50	2.50	-	-	-	0.000	0
Inlet-007	0.45	0.45	-	-	-	0.000	0
Inlet-008	1.47	1.47	-	-	-	0.000	0
Inlet-009	1.88	1.88	-	-	-	0.000	0
Inlet-012	14.41	14.41	-	-	-	0.000	0
Inlet-013	17.93	17.93	-	-	-	0.000	0
Inlet-014	9.76	9.76	-	-	-	0.000	0
Inlet-23	1.18	1.18	-	-	-	0.000	0
Inlet-24	0.77	0.77	-	-	-	0.000	0
Inlet-25	2.47	2.47	-	-	-	0.000	0
Inlet-26	1.36	1.36	-	-	-	0.000	0
Inlet-27	1.57	1.57	-	-	-	0.000	0
Inlet-28	2.12	2.12	-	-	-	0.000	0
Inlet-29	1.89	1.89	-	-	-	0.000	0
Inlet-30	1.46	1.46	-	-	-	0.000	0
Inlet-31	2.10	2.10	-	-	-	0.000	0
Inlet-32	3.62	3.62	-	-	-	0.000	0
Inlet-33	1.89	1.89	-	-	-	0.000	0

Inlet-34	3.78	3.78	-	-	-	0.000	0
Inlet-35	6.97	6.97	-	-	-	0.000	0
Inlet-36	1.21	1.21	-	-	-	0.000	0
Inlet-37	0.35	0.35	-	-	-	0.000	0
Inlet-38	1.46	1.46	-	-	-	0.000	0
Inlet-39	2.79	2.79	-	-	-	0.000	0
Inlet-40	2.41	2.41	-	-	-	0.000	0
Inlet-41	4.70	4.70	-	-	-	0.000	0
Inlet-42	2.33	2.33	-	-	-	0.000	0
Inlet-43	1.43	1.43	-	-	-	0.000	0
Inlet-44	1.15	1.15	-	-	-	0.000	0
Inlet-45	1.95	1.95	-	-	-	0.000	0
Inlet-46	2.06	2.06	-	-	-	0.000	0
Inlet-47	1.39	1.39	-	-	-	0.000	0
Inlet-48	0.49	0.49	-	-	-	0.000	0

****
Storage Node Summary
****

Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days hh:mm	Average Ponded Volume 1000 ft³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft³
Stor-01	0.030	100	0 00:06	0.001	2	120.47	0.00	0:00:00	0.000

****
Outfall Loading Summary
****

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
Out-POC'A'	6.21	6.87	105.19
System	6.21	6.87	105.19

****
Link Flow Summary
****

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged minutes	Reported Condition
Link-001	CONDUIT	0 00:08	46.74	1.00	105.19	438.52	0.24	0.33	0	Calculated
Link-002	CONDUIT	0 00:07	24.23	1.00	111.80	122.87	0.91	0.71	0	Calculated
Link-003	CONDUIT	0 00:07	7.50	1.00	30.29	49.12	0.62	0.57	0	Calculated
Link-004	CONDUIT	0 00:07	7.84	1.00	39.16	49.28	0.79	0.67	0	Calculated
Link-005	CONDUIT	0 00:16	3.35	1.00	3.37	12.28	0.27	0.36	0	Calculated
Link-007	CONDUIT	0 00:07	3.36	1.00	0.92	3.00	0.31	0.38	0	Calculated
Link-008	CONDUIT	0 00:16	5.63	1.00	3.39	11.43	0.30	0.37	0	Calculated
Link-011	CONDUIT	0 00:06	5.85	1.00	13.49	28.18	0.48	0.49	0	Calculated
Link-012	CONDUIT	0 00:06	6.30	1.00	9.19	19.66	0.47	0.48	0	Calculated
Link-013	CONDUIT	0 00:05	7.78	1.00	9.43	26.11	0.36	0.41	0	Calculated
Link-014	CONDUIT	0 00:00	0.00	1.00	0.00	18.18	0.00	0.00	0	Calculated
Link-015	CONDUIT	0 00:06	14.84	1.00	17.82	23.85	0.75	0.64	0	Calculated
Link-016	CONDUIT	0 00:06	9.48	1.00	1.49	10.51	0.14	0.25	0	Calculated

Link-017	CONDUIT	0	00:07	5.08	1.00	3.67	3.43	1.07	1.00	2	SURCHARGED
Link-018	CONDUIT	0	00:05	11.01	1.00	9.71	12.11	0.80	0.68	0	Calculated
Link-019	CONDUIT	0	00:07	7.30	1.00	49.10	63.59	0.77	0.66	0	Calculated
Link-020	CONDUIT	0	00:07	7.25	1.00	49.10	61.56	0.80	0.67	0	Calculated
Link-022	CONDUIT	0	00:07	13.09	1.00	5.05	70.92	0.07	0.18	0	Calculated
Link-023	CONDUIT	0	00:08	5.84	1.00	4.44	23.97	0.19	0.29	0	Calculated
Link-024	CONDUIT	0	00:08	4.88	1.00	3.76	19.64	0.19	0.30	0	Calculated
Link-025	CONDUIT	0	00:08	4.89	1.00	3.79	19.63	0.19	0.30	0	Calculated
Link-026	CONDUIT	0	00:07	3.45	1.00	1.13	19.57	0.06	0.16	0	Calculated
Link-027	CONDUIT	0	00:07	3.56	1.00	1.14	8.96	0.13	0.24	0	Calculated
Link-029	CONDUIT	0	00:06	3.63	1.00	1.17	8.14	0.14	0.25	0	Calculated
Link-030	CONDUIT	0	00:05	5.17	1.00	1.23	9.12	0.14	0.25	0	Calculated
Link-031	CONDUIT	0	00:00	0.00	1.00	0.00	9.09	0.00	0.00	0	Calculated
Link-032	CONDUIT	0	00:05	4.33	1.00	1.85	10.03	0.18	0.29	0	Calculated
Link-033	CONDUIT	0	00:07	9.65	1.00	2.69	26.52	0.10	0.21	0	Calculated
Link-034	CONDUIT	0	00:07	8.36	1.00	2.46	7.27	0.34	0.40	0	Calculated
Link-035	CONDUIT	0	00:05	3.38	1.00	0.45	3.95	0.11	0.23	0	Calculated
Link-037	CONDUIT	0	00:05	6.18	1.00	1.26	19.51	0.06	0.17	0	Calculated
Link-100	CONDUIT	0	00:06	6.43	1.00	6.39	10.88	0.59	0.55	0	Calculated
Link-101	CONDUIT	0	00:05	9.26	1.00	2.46	25.91	0.09	0.21	0	Calculated
Link-102	CONDUIT	0	00:05	9.93	1.00	1.36	36.79	0.04	0.13	0	Calculated
Link-103	CONDUIT	0	00:05	10.47	1.00	10.98	38.02	0.29	0.37	0	Calculated
Link-104	CONDUIT	0	00:05	11.79	1.00	1.56	44.12	0.04	0.13	0	Calculated
Link-105	CONDUIT	0	00:05	9.19	1.00	2.12	27.24	0.08	0.19	0	Calculated
Link-106	CONDUIT	0	00:05	5.30	1.00	15.13	14.26	1.06	0.90	0	> CAPACITY
Link-107	CONDUIT	0	00:07	5.23	1.00	14.88	13.75	1.08	0.94	0	> CAPACITY
Link-108	CONDUIT	0	00:05	5.85	1.00	1.89	15.13	0.12	0.24	0	Calculated
Link-109	CONDUIT	0	00:06	13.11	1.00	17.89	76.55	0.23	0.33	0	Calculated
Link-110	CONDUIT	0	00:05	11.17	1.00	1.46	42.05	0.03	0.13	0	Calculated
Link-111	CONDUIT	0	00:06	11.53	1.00	19.11	64.05	0.30	0.37	0	Calculated
Link-112	CONDUIT	0	00:06	12.82	1.00	36.66	97.59	0.38	0.42	0	Calculated
Link-113	CONDUIT	0	00:06	12.68	1.00	38.50	94.45	0.41	0.44	0	Calculated
Link-114	CONDUIT	0	00:05	7.56	1.00	0.35	45.15	0.01	0.06	0	Calculated
Link-115	CONDUIT	0	00:05	10.08	1.00	1.20	39.26	0.03	0.12	0	Calculated
Link-116	CONDUIT	0	00:06	12.18	1.00	39.75	88.37	0.45	0.47	0	Calculated
Link-117	CONDUIT	0	00:06	8.79	1.00	40.96	57.08	0.72	0.63	0	Calculated
Link-118	CONDUIT	0	00:05	10.93	1.00	1.46	40.79	0.04	0.13	0	Calculated
Link-119	CONDUIT	0	00:05	13.47	1.00	2.78	42.22	0.07	0.17	0	Calculated
Link-120	CONDUIT	0	00:06	18.76	1.00	44.30	153.28	0.29	0.37	0	Calculated
Link-121	CONDUIT	0	00:06	8.31	1.00	44.69	52.33	0.85	0.71	0	Calculated
Link-122	CONDUIT	0	00:05	8.40	1.00	0.48	13.78	0.04	0.13	0	Calculated
Link-123	CONDUIT	0	00:05	7.40	1.00	2.20	9.50	0.23	0.32	0	Calculated
Link-124	CONDUIT	0	00:05	6.90	1.00	1.37	10.58	0.13	0.24	0	Calculated
Link-125	CONDUIT	0	00:05	6.75	1.00	1.10	11.04	0.10	0.21	0	Calculated
Link-126	CONDUIT	0	00:05	7.42	1.00	1.87	10.46	0.18	0.29	0	Calculated
Link-127	CONDUIT	0	00:05	8.13	1.00	2.00	13.33	0.15	0.26	0	Calculated
Link-128	CONDUIT	0	00:05	7.54	1.00	1.35	13.25	0.10	0.21	0	Calculated
Link-131	CONDUIT	0	00:00	0.00	1.00	0.00	21.55	0.00	0.00	0	Calculated
Link-132	CONDUIT	0	00:06	15.12	1.00	6.96	34.00	0.20	0.31	0	Calculated
Link-133	CONDUIT	0	00:05	14.24	1.00	3.77	39.95	0.09	0.21	0	Calculated
Link-134	CONDUIT	0	00:07	6.84	1.00	9.93	21.26	0.47	0.48	0	Calculated
Link-135	CONDUIT	0	00:05	7.93	1.00	1.89	23.25	0.08	0.19	0	Calculated
Link-136	CONDUIT	0	00:05	14.39	1.00	3.61	41.34	0.09	0.20	0	Calculated
Link-137	CONDUIT	0	00:06	9.61	1.00	13.84	30.88	0.45	0.47	0	Calculated
Link-138	CONDUIT	0	00:05	9.10	1.00	2.40	25.54	0.09	0.21	0	Calculated
Link-139	CONDUIT	0	00:06	11.31	1.00	15.83	68.20	0.23	0.33	0	Calculated
Link-140	CONDUIT	0	00:05	12.75	1.00	2.09	43.61	0.05	0.15	0	Calculated
Link-141	CONDUIT	0	00:06	11.13	1.00	17.59	63.97	0.28	0.36	0	Calculated
Link-86	CONDUIT	0	00:06	8.77	1.00	44.34	54.37	0.82	0.68	0	Calculated
Link-87	CONDUIT	0	00:07	18.78	1.00	41.42	157.36	0.26	0.35	0	Calculated
Link-88	CONDUIT	0	00:05	20.48	1.00	14.25	39.35	0.36	0.42	0	Calculated
Link-94	CONDUIT	0	00:08	7.30	1.00	2.59	2.39	1.08	1.00	3	SURCHARGED
Link-95	CONDUIT	0	00:05	4.52	1.00	1.18	12.70	0.09	0.21	0	Calculated
Link-96	CONDUIT	0	00:05	4.09	1.00	0.76	13.28	0.06	0.16	0	Calculated
Link-97	CONDUIT	0	00:05	4.30	1.00	1.86	7.55	0.25	0.34	0	Calculated
Link-98	CONDUIT	0	00:06	6.31	1.00	4.24	12.23	0.35	0.41	0	Calculated
Link-99	CONDUIT	0	00:05	7.88	1.00	9.63	12.63	0.76	0.65	0	Calculated

```
*******************************
Highest Flow Instability Indexes
*******************************
Link Link-002 (2)
Link Link-001 (2)

WARNING 116 : Conduit inlet invert elevation defined for Conduit Link-016 is below upstream node invert elevation.
              Assumed conduit inlet invert elevation equal to upstream node invert elevation.

Analysis began on:  Fri Feb 19 07:14:01 2021
Analysis ended on:  Fri Feb 19 07:14:11 2021
Total elapsed time: 00:00:10
```

H:\1100\1176.30 Merge 56\Engineering\Reports\Drainage\Merge Private Storm Drain.dwg

MITIGATED CONDITION

Autodesk® Storm and Sanitary Analysis 2016 - Version 13.2.147 (Build 0)

****
Project Description
****
File Name ..... Merge Proposed Onsite Hydrology (After Detention).SPF
Description ..... H:\1100\1176.30 Merge 56\Engineering\Reports\Drainage\Merge Private Storm Drain.dwg

****
Analysis Options
****
Flow Units ..... cfs
Link Routing Method ..... Kinematic Wave
Storage Node Exfiltration.. None
Starting Date SEP-26-2017 00:00:00
Ending Date SEP-27-2017 00:00:00
Report Time Step 00:05:00

****
Element Count
****
Number of subbasins 0
Number of nodes 4
Number of links 4

****
Node Summary
****

Node ID	Element Type	Invert Elevation ft	Maximum Elev. ft	Ponded Area ft²	External Inflow
HMP-1A	JUNCTION	347.00	375.00	0.00	
Jun-01	JUNCTION	341.67	369.77	0.00	
Out-POC'A'	OUTFALL	0.00	338.75	0.00	
HMP-1	STORAGE	347.00	362.00	0.00	Yes

****
Link Summary
****

Link ID	From Node	To Node	Element Type	Length ft	Slope %	Manning's Roughness
Link-001	Jun-01	Out-POC'A'	CONDUIT	153.0	4.1958	0.0150
Link-002	HMP-1A	Jun-01	CONDUIT	231.8	2.1566	0.0150
Orifice-HMP-1	HMP-1	HMP-1A	ORIFICE			
Weir-HMP-1	HMP-1	HMP-1A	WEIR			

****
Cross Section Summary
****

Link ID	Shape	Depth/ Diameter ft	Width ft	No. of Barrels	Cross Sectional Area ft²	Full Flow Hydraulic Radius ft	Design Flow Capacity cfs
Link-001	CIRCULAR	3.50	3.50	1	9.62	0.88	178.61
Link-002	CIRCULAR	3.50	3.50	1	9.62	0.88	128.05

Flow Routing Continuity	Volume acre-ft	Volume Mgallons
External Inflow	3.176	1.035
External Outflow	3.095	1.009
Initial Stored Volume	0.000	0.000
Final Stored Volume	0.073	0.024
Continuity Error (%)	0.001	

Node Depth Summary

Node ID	Average Depth Attained ft	Maximum Depth Attained ft	Maximum HGL Attained ft	Time of Max Occurrence days	Time of Max Occurrence hh:mm	Total Flooded Volume acre-in	Total Flooded Time minutes	Retention Time hh:mm:ss
HMP-1A	0.21	0.88	347.88	0	04:08	0	0	0:00:00
Jun-01	0.54	1.21	342.88	0	04:08	0	0	0:00:00
Out-POC'A'	335.43	335.99	335.99	0	04:09	0	0	0:00:00
HMP-1	3.86	15.00	362.00	0	04:08	0.07	1	0:00:00

Node Flow Summary

Node ID	Element Type	Maximum Lateral Inflow cfs	Peak Inflow cfs	Time of Peak Inflow Occurrence days	Time of Peak Inflow Occurrence hh:mm	Maximum Flooding Overflow cfs	Time of Peak Flooding Occurrence days	Time of Peak Flooding Occurrence hh:mm
HMP-1A	JUNCTION	0.00	17.59	0	04:08	0.00		
Jun-01	JUNCTION	0.00	17.62	0	04:08	0.00		
Out-POC'A'	OUTFALL	0.00	17.57	0	04:09	0.00		
HMP-1	STORAGE	90.50	90.50	0	04:03	6.30	0	04:08

Storage Node Summary

Storage Node ID	Maximum Ponded Volume 1000 ft³	Maximum Ponded Volume (%)	Time of Max Ponded Volume days	Time of Max Ponded Volume hh:mm	Average Ponded Volume 1000 ft³	Average Ponded Volume (%)	Maximum Storage Node Outflow cfs	Maximum Exfiltration Rate cfm	Time of Max. Exfiltration Rate hh:mm:ss	Total Exfiltrated Volume 1000 ft³
HMP-1	84.072	100	0	04:08	21.654	26	17.59	0.00	0:00:00	0.000

Outfall Loading Summary

Outfall Node ID	Flow Frequency (%)	Average Flow cfs	Peak Inflow cfs
Out-POC'A'	97.95	1.59	17.57
System	97.95	1.59	17.57

****
Link Flow Summary
****

Link ID	Element Type	Time of Peak Flow Occurrence days hh:mm	Maximum Velocity Attained ft/sec	Length Factor	Peak Flow during Analysis cfs	Design Flow Capacity cfs	Ratio of Maximum /Design Flow	Ratio of Maximum Flow Depth	Total Time Surcharged minutes	Reported Condition
Link-001	CONDUIT	0 04:09	11.82	1.00	17.57	178.61	0.10	0.21	0	Calculated
Link-002	CONDUIT	0 04:08	9.34	1.00	17.62	128.05	0.14	0.25	0	Calculated
Orifice-HMP-1	ORIFICE	0 04:08			4.28			0.00		
Weir-HMP-1	WEIR	0 04:08			13.32			0.00		

****
Highest Flow Instability Indexes
****
All links are stable.

WARNING 108 : Surcharge elevation defined for Junction Jun-01 is below junction maximum elevation. Assumed surcharge elevation equal to maximum elevation.
WARNING 002 : Max/rim elevation (depth) increased to account for connecting conduit height dimensions for Node HMP-1A.

Analysis began on: Fri Feb 19 07:54:11 2021
Analysis ended on: Fri Feb 19 07:54:11 2021
Total elapsed time: < 1 sec


POC 'A'
AREA=36.10 AC
Before Detention:
Q_{50}=105.19 CFS
V_{50}=46.74 FPS
After Detention:
Q_{50}=17.57 CFS
V_{50}=11.82 FPS
SR 56
CAMINO DEL SUR
MERGE AVENUE
CARMEL MOUNTAIN ROAD
LEGEND
N
0 40 80 160 240
SHEET 1 OF 1
MERGE 56 – ONSITE UNITS 1 AND 2 CC'A'
PROPOSED DRAINAGE EXHIBIT
latitude 33
PLANNING & ENGINEERING
MERGE 56 SWQMP
PTS 679236
CC'A' ADDENDUM